Charting Trajectories on the Peripheries of Community Practice: Mobile Learning for the Humanities in South Korea

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This thesis is submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy, 2016 at University College London. I, Michael Sean Gallagher, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis. This thesis is 97903 words, excluding references and appendix.

Abstract

This research is about the rich movements between informal, formal, socialized and individualized spaces which characterize the learning practices of graduate humanities students in South Korea, a field which mobile learning research in this setting has hitherto neglected. To address this gap, fieldwork was carried out with 25 graduate students across several universities in Seoul involving interviews, mobile artifacts, and reflective prompts across two discrete phases of activity. The study asked how graduate students use mobile technology to support their learning, what learning practices are presented in this mobile technology use, what mobile artifacts are being produced, and whether this combination of mobile technology use and learning practice suggest a learner trajectory (Wenger, 1998) in respect to the disciplinary community.

Analysis presents the trajectories being evidenced by these graduate students, leading to a discussion on how graduate students are shaping their learning practices and participation in the humanities through mobile technology. Findings suggest the trajectories that graduate students exhibit in relation to their disciplinary communities are structured by mobile technology itself, informal and formal practices consistent with community participation, and South Korean sociocultural practice, facilitating adaptations to Wenger's original trajectories. Trajectories presented were not monolithic, but rather complex aggregations of adherence, subversion, and intent, suggesting that participation in the disciplinary community was shaped by multimemberships and individualized practice.

The findings suggest that more robust methodologies are needed to account for the complexity of learning trajectories. The contributions of this thesis are: a more sophisticated definition of mobile learning, methodological models that allow for

this definition to be evidenced, an analytical framework that coheres the disparate data points being evidenced through mobile technology, and a more holistic presentation of mobile technology use than has been presented in research on South Korean higher education.

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Chapter 1: Introduction

1.1: Overview of Research

The contexts for this research are the sophisticated informal mobile cultures emerging from the South Korean context as positioned against the formal structures of higher education and government-initiated technology-enhanced learning initiatives. This thesis attempts to bridge this divide to determine how graduate students navigate and potentially benefit from this movement between informal and formal activity.

Using Wenger's concept of learning trajectories (1998) and adapted concepts of coherence, this thesis proposes that much of the current and past mobile learning research neglects the rich movements between the informal, formal, socialized, and individualized spaces that inform many of the learning practices that students use to participate in their discipline. This thesis also proposes that these movements can be used to chart a trajectory in relation to a disciplinary community, one that might correlate to or prove predictive of affinity to or engagement with that community.

As such, this thesis explores the learning trajectories (Wenger, 1998) being evidenced by the mobile technology use of graduate students in the humanities in South Korea. It is designed to determine whether this mobile technology use makes visible the learning activities of these graduate students and whether that activity provides evidence of movement in concert with a disciplinary community of practice (Lave & Wenger, 1991). Yet, it presupposes that these graduate students manage multimemberships (Wenger, 1998) simultaneously, and that each membership has the potential to structure or govern activity in another

community. This thesis attempts to provide a holistic point from which to observe such multimemberships by the activity evidenced through mobile technology.

1.2: Gaps in the Research

The gaps that this thesis looks to address span several categories, including current research and research design on and in the South Korean context, holistic accounts of mobile learning, as well as research identifying the learning practices of humanities students. The theoretical gaps include the need for adaptations and more precise positioning of learning trajectories (Wenger, 1998) as well as addressing the critiques of community of practice theory (Gourlay, 2009; Lea, 2005, and more) as applied to academic communities. The methodological and analytical gaps, the address of which form the major contributions of this thesis, are presented further in this chapter.

This thesis is looking to address gaps in the contextualization of South Korean learning practices at the university level. While some research exists, (ethnographic work on learning at a Korean university in Huh, 2004, for example), this thesis is attempting to provide a qualitative model for identifying the learning practices of South Korean university students that span the informal, formal, socialized, and individualized learning (adapted from Park, 2011). The South Korean research context is one dominated by quantitative research and technologically deterministic models of technology use. As such, a contribution of this thesis is precisely the address of that gap; it provides a qualitative methodology for observing these learning practices across a range of communities that builds on the informal. As such, this methodology might be employed across other formal learning communities in the South Korean context, or in fields where community-based methodologies have proven insufficient for identifying or understanding learner behavior, particularly when managed through technology.

This thesis is attempting to expand the research done on South Korean informal mobile culture (Hjorth, 2013, 2009a, 2009b; Haddon & Kim, 2007 & Ok, 2011) to formal learning environments; little research exists to bridge these two discrete yet complementary fields of activity in the South Korean context. This thesis is especially concerned with charting activity between informal and formal spaces and these informal models, while instructive, have proven insufficient. This thesis is also concerned with identifying hybridized learning practices, practices that transcend or freely flow between informal and formal spaces. As such, a further contribution of this thesis is to identify hybridized learning practices, those that span multimemberships, to assist in charting the learning trajectories evidenced by these graduate students.

More broadly, this thesis presents the South Korean context for learning, evidenced through mobile technology and humanities practice, a context that has been largely undertheorized. First, this research establishes the context in which this disciplinary and technological activity takes place. It then establishes the media, communicative, and learning practices that these graduate students exhibited and articulated that establish the field of activity from which learning trajectories are gleaned. As such, it builds on the work of Hjorth (2013) and the exploration of informal mobile media practices and their structuring through social participation; as well as Yoon's (2003) concept of retraditionalized practice, or how existing Korean cultural and social practices are being reconstructed through mobile technology. This thesis bridges the informal practices discussed in both Hjorth and Yoon with formal practices emerging from disciplinary participation and illustrates how movements between the two are instructive for evidencing learning trajectories and understanding their significance for both mobile learning and humanities practice in the South Korean context.

Many of the methodological adaptations in this thesis are addressing gaps in localized application, particularly the South Korean context. Many of the methods employed in this research design are appropriated from studies on online learning, particularly Bayne et al., (2014), which used combinations mixed methods to identify the learning and engagement patterns of online learners. Many adaptations were needed (Rose, 2012 and Monaco, 2009) to transcribe and analyze particular forms of collected data. As such, the research design, a collection of adaptations of existing work, can be positioned as identifying a major gap in methodological research.

Further, this thesis goes to lengths to further reposition mobile learning as a fluid construction of context, one where learners "artfully engage with their surroundings to create impromptu sites of learning" (Sharples, Taylor, & Vavoula, 2007) to transform habitus (Kress & Pachler, 2007). This thesis evicts technologically deterministic definitions (discussed in Kukulska-Hulme et al., 2005) as well as geographically or temporal definitions of mobile learning (anywhere or anytime, a familiar trope in early mobile learning literature, discussed in Yahya et al., 2010). This thesis adapts Park's (2011) categorizations of mobile learning activity to chart these impromptu sites of learning and transformation of habitus. It advances the following definition, one that foregrounds the multiple mobilities being evidenced in this thesis: mobile learning is learning that occurs across technologies and interactional contexts that presents evidence of categorical, cognitive, material, and spatial mobility. This definition of mobile learning is positioned as a significant contribution of this thesis.

Additionally, this thesis seeks to iterate on both community of practice theory (Lave & Wenger, 1991) and learning trajectories (Wenger, 1998) by identifying how the movements evidenced by these graduate students suggest a more nuanced view of community engagement than is generally presented in community of practice research. In this thesis, these graduate students are assumed to be moving through formal, informal, socialized, and individualized states of activity, spanning memberships in discrete communities. The "semipermeable membrane" (Potter, 2012, p.6) between informal and formal learning made visible through mobile technology is presented in this thesis as a porous boundary. As such, this thesis poses relevance to those looking to articulate or evolve how learning trajectories are evidenced, and how this repositions community of practice theory as a means of analyzing a larger field of activity related to learning.

1.3 Research Questions

These gaps in the research literature necessitated the following research questions. As this thesis is designed to determine whether the mobile technology use of these graduate students can both structure and evidence a learning trajectory, to evidence the characteristics of the learning trajectory, and to determine its relation to disciplinary communities, the research questions are as follows:

1. How do graduate students in the humanities in South Korea use mobile technology to support their learning practices?
2. What learning practices are presented in this mobile technology use?
3. What mobile artifacts are being produced in mobile technology in the humanities?

4. Does this combination of mobile technology use, artifacts, and learning practice suggest a learner trajectory in respect to the disciplinary community?
    a. If so, what shape does that trajectory take?

These research questions provide an understanding of the specific South Korean context for learning in the humanities with mobile technology; what practices, media or otherwise, are emerging from that learning; and if and how these might subsequently aggregate into a learning trajectory. The landscape data provided through the first research question is parsed to extract the learning practices evidenced in this landscape in the second research question. These first two questions provide both the landscape and the methods by which this landscape is engaged. The third research question allows for the evidencing of the material generated as a result of these practices in this landscape. The research questions move from landscape to method to material in methodical order. The fourth research question attempts to determine whether these landscapes, methods, and materials can indicate a trajectory in concert with a disciplinary community of practice.

While these research questions are decidedly empirical, their accompanying methodological and analytical frameworks remains the major contribution of this thesis, a point which is discussed further in the following sections on the contributions of this thesis.

1.4 Contributions of this Research

The contributions of this thesis range from the methodological and analytical to the empirical. The methodology and accompanying analytical framework are presented as contributions and claims to originality; methodologically and

analytically, this thesis presents a robust instrument for identifying learner movements through complex overlapping mobile spaces, one which pays needed reverence to sociocultural factors in evidencing these movements. The repositioning of space and the redefinition of mobile learning are contributions that beget the empirical findings emerging as a result. The learning trajectories of Wenger (1998) are localized to the South Korean context and adapted as a result, providing a more rigorous foundation from which to apply them in localized contexts. As such, its utility is applicable throughout the field of technology enhanced learning initiatives particularly as applied in specific regional contexts, even if the empirical results are not generalizable beyond these contexts. These contributions are discussed in the following sections.

1.4.1: Methodological Contribution

The methodology presented in this thesis offers practical value for researchers looking to move beyond limited fields of inquiry and towards more holistic accounts of practice in studies of mobile technology use. This methodology provides a model for evidencing complexity across the modes most readily employed in mobile technology: text, audio, video, and image. It provides a mechanism for cohering movement across both modes through narrative consistency. It addresses gaps in the research literature related to the bridging of informal and formal mobile cultures and retains a fidelity to the sociocultural specificity of South Korean learning practices. A mobile methodology of this scope and fidelity to lived practice in the South Korean context has not been attempted in mobile learning research.

1.4.2: Analytical Contribution

The methodology necessitated the need for a robust analytical framework. It is designed to established coherence across modes towards a specific enterprise, namely community engagement, rather than strictly as a semiotic exercise. This framework is designed to cohere activity and material and chart a learning trajectory. It provides a practical mechanism for analyzing modal data amidst a larger narrative of participation and learning. As such, it contributes to the research on Wenger's learning trajectories (1998) by providing an analytical instrument to systematically chart and analyze trajectory. As such, it addresses a gap in practical application; beyond merely suggesting the presence of learning trajectories, this analytical framework surfaces these trajectories in the modes most readily employed by these graduate students while managing their learning across the nexus of multimembership (Wenger, 1998).

1.4.3: Spatial Contribution: Social Topology

Much mobile learning and community of practice research suffers from an overly granular research focus on one particular field of activity and neglects the larger field of activity that students transverse. To address this, social topologies are advanced in this thesis as larger sets of shifting relationships spanning interactions and contexts that suggest an emergent social space. This represents a significant contribution of this thesis as it establishes that mobility is also spatial; social topologies are not static or stable enterprises, but rather shifting states of relationships with multimemberships. Space, the interactional context, is being constantly created, transformed, discarded, and iterated upon, hence the need for social topology.

The use of social topologies addresses a gap in the research literature that has hindered the application of learning trajectories. The nexus of multimembership,

the space from which a connected group or series of trajectories and community engagements are managed, requires a position of space that allows for overlap. Multiple practices potentially aggregating into the presentation of a learning trajectory do not exclude the possibility of another learning trajectory taking place simultaneously. Social topologies provide a position that allows trajectories to emerge from activity, practice, intent, and coherence rather than strictly community practice. Social topologies provide a position that realizes Wenger's original position of trajectories, one that assumes the "interaction of multiple convergent and divergent trajectories" (1998, p. 154), and as such addresses a gap in the research.

1.4.4: Mobile Learning Contribution: Definition

A further contribution is to mobile learning itself, which is defined as learning that occurs across technologies and interactional contexts that presents evidence of categorical, cognitive, material, or spatial mobility. This definition of mobile learning emphasizes transformation and the use of learning trajectories to chart this movement emphasizes the mobility in mobile learning. Learning is not a fixed point, but rather a trajectory of aggregated activity and intent. This definition of mobile learning and its coupling with Wenger's learning trajectories (1998) contributes to the undertheorized field of mobile learning, which routinely emphasizes the technology used over the practices involved in learning (Sharples, Taylor, & Vavoula, 2007).

There is a need for mobile methods to match this emphasis in mobile learning on emergent places of mobility, as this thesis attempts to do. As social topology is advanced as a suitable position of space for these graduate students, mobile learning as positioned in this thesis implicitly demonstrates that place itself is

being produced through activity. Place, the interactional context, is being constantly created, transformed, discarded, and iterated upon, hence the need for social topology and this broadened definition of mobile learning. The contribution of this thesis is to reiterate the necessity of developing mobile methods and positions of mobile learning that makes these emergent spaces visible.

1.4.5: Learning Trajectories as positioned for this thesis

The focus on learning trajectories in this thesis is a deliberate attempt to chart the movement of graduate students in a South Korean context in relation to a particular set of communities. While this thesis focuses on the disciplinary community of practice, it also attempts to chart movements in the informal and the socialized communities that inform the learning practices of many of these graduate students and compose the multimemberships with which they routinely interact.

Learning trajectories as positioned by Wenger (1998) range from peripheral trajectories that provide access to the community, but do not lead to full membership; inbound trajectories that progress from peripheral participation to recognition with the community; insider trajectories that encompass a constant renegotiation of one's identity within the community; boundary trajectories where the member participates in more than one community, sometimes resulting in practice-sharing; and outbound trajectories that involve abandoning one identity to take up another within the community (Oliver & Carr, 2009). These five trajectories were adapted for this thesis. Insider trajectories were removed as these graduate students were able to enact an insider trajectory considering the limitations to full membership in an academic community of practice (Gourlay, 2009). Peripheral trajectories were excluded in favor of boundary trajectories as there was expected to be evidence of practice-sharing, and multimemberships

most notably between professional and academic communities. Peripheral trajectories also assume full membership is not achieved, a distinction that cannot be made with graduate students who might someday achieve full membership. Peripheral trajectories, in their focus on the movements in relation to one particular community, neglect the larger field of activity being transversed by these graduate students.

Based on the consistent application of the analytical framework discussed in detail in Chapter 5, further adaptations to Wenger's original learning trajectories were necessitated by the presence in the data of movements inconsistent with, or not contorting to, inbound, outbound, or boundary trajectories. These are briefly summarized as follows and returned to in detail in Chapter 9, but it is important to note at the onset that these represent further contributions of this thesis providing as they do a needed differentiation for learning trajectories at the localized (South Korean) level.

1. Oscillating trajectory: A trajectory suggesting an overall movement towards one community (an adaptation of an inbound trajectory), but with the presence of activities that nominally or inconclusively subvert this inbound direction.
2. Liminal trajectory: Adapted from boundary trajectory, legitimate peripheral participation (Lave & Wenger, 1991) and the nexus of multimembership (Wenger, 1998), liminal trajectory is defined as the state of simultaneous peripheral participation that exhibits little indication of centering. Individuals in this category reside in this nexus of multimembership without centering towards any one community.

These adaptations have both conceptual and pragmatic implications that will be discussed further in this thesis.

1.5: Research Design

Employing this methodology, two studies were conducted beginning in October, 2013 and concluding in September, 2014 to investigate the research questions. The pilot study was conducted from October 2013-March 2014 and the main study was conducted from March 2014-September 2014. In the main study data was collected from twenty-five graduate students in the humanities in South Korean universities. The humanities being represented by participating graduate students include the disciplines of art history, history, linguistics, literature, media studies, philosophy, and Korean Studies.

The data collection proceeded in two phases and the first phase consisted of two parts. Students were first interviewed to determine their use of mobile technology, what media they produce in mobile technology, and how, if at all, that mobile technology is used to participate in their disciplinary community. These interviews were supplemented with mobile artifacts (multimedia, text, or otherwise), created to support humanities practice, participation, informal learning, or other aspects that the graduate student identified as being of importance to their learning overall. After an initial analysis of Phase 1 data, Phase 2 consisted of a series of reflective prompts delivered through KakaoTalk, a native Korean messaging application. These prompts served to stimulate an appraisal of the participant's use of mobile technology, their participation in the disciplinary communities with which they associate, as well as to cohere many of the findings emerging from the Phase 1 analysis. These phases are outlined in the table as follows.

Phase	Activity	Points of data collected
Phase 1	Interview	Mobile technology use, affinity for discipline; professional, academic, or personal goals; learning or technology practices; and socialized participation.
Phase 1	Mobile artifact submission	Mobile media collected that supports the students learning (informally or formally), documents or illustrates a learning or disciplinary practice.
Phase 2	Reflective prompts	Short reflected prompts crafted from an initial analysis of Phase 1 that appraised the use of mobile technology, the nature of their learning practices, and their participation in their communities.

Table 1: Phases of Data Collection

An adapted analytical framework, drawing primarily on Wenger's learning trajectories, narrative intentionality (Bruner, 1991) and coherence, is used to investigate the practices, activities, artifacts, and movements being evidenced by these graduate students to shape their community participation. This leads to a discussion on how this analysis assists in positioning mobile learning away from technologically deterministic antecedents and how graduate students are shaping their learning practices and participation in the humanities in higher education through mobile technology. A condensed framework table is presented in Table 2 as follows, but is expanded on in Chapter 5: Methodology.

Data Type	Analytical Method	Focus of Analysis

Interview Transcripts & Reflective Prompts	Bruner, 1991; Parallel vs. contrapuntal structure (Monaco, 2009)	This phase focuses on the historical events and their chronological arrangement (narrative diachronicity). Further emphasis on intentional state entailment: that technology use and narrative inclusion is a form of intentional state entailment (Bruner, 1991). This narrative sequencing is used to chart chronology and intent.
Multimodal Data	Rose (2012); Monaco (2009); Fluegge (2011)	Data is analyzed according to its coherence (parallel vs. contrapuntal structure). Are narrative elements repeated, contradicted, or subverted in later stages of data collection?
Combined Data	Coherence: Monaco (2009) & Learning Trajectory: Wenger (1998)	Coherence across the data is used to identify the consistency of the narrative being applied, and its use in charting a larger learning trajectory. Trajectory (Wenger, 1998) is charted through coherence across these modes. Interpretations of these narratives and their suggested trajectories are correlated through reflective prompts.

Table 2: Analytical Framework

The objective in this analysis is to identify practices, materials, and intent amidst a particular environment. These are then cohered into a trajectory in relation to a particular community. The attributes presented in this framework are used to triangulate activity into a narrative of intentionality where the participant is expressing intent across a series of modes. This narrative intent is then charted along with its parallel and contrapuntal data into a trajectory. Coherence as

presented in this thesis is adapted from several strands of theory, but is designed here to identify consistent themes or inferences emerging *across* the modes of data, rather than *within* a particular artifact.

1.6: Research in the Humanities & the South Korean Context

As the South Korean sociocultural context structures much of this learning activity and forms a contribution of this research, it is important to briefly explain what this context is without resorting to reductionist tropes about the impact of Confucianism or communalism. Yet, these all exist in some measure within this context. The South Korean context from which this thesis emerges is a sophisticated orchestration of historical, philosophical, and sociocultural factors. It is within this orchestration that the learning practices and mobile technology use of graduate students in the humanities is positioned; indeed, it is this context that structures much of the activity itself.

This context is heavily influenced by the historical legacy of South Korea, a nation which has existed in proximity to, been subjugated by, and emerged independently from two neighboring countries. From China, South Korea has adopted Confucianism and drawn from it a highly structured social order; from Japan, South Korea identified economic and development models that allowed it to emerge from devastation at the end of a brutal war. Over the last 110 years, Korea has gone from Confucian kingdom to Japanese colony to free state to divided state to civil and proxy war, poverty, rapid industrialization, and to its current manifestation as economic power. With such rapid change comes considerable tension, and much of this can be found in the South Korean higher education system, itself an amalgamation of Korean tradition and Western organizational models (Park & Weidman, 1999). As such, the South Korean higher educational model is a complex orchestration of foreign organizational models

built on Korean philosophical and sociocultural foundations. While caution must be applied in overemphasizing the dichotomy of Eastern (typified here by South Korea) and Western (typified here by the UK) learning, particularly due to their significant overlap and undertheorized nature (Ryan & Louie, 2007), differences remain.

The humanities as practiced at the universities explored in this thesis is decidedly utilitarian. The graduate programmes are generally applied rather than purely theoretical pursuits. They are often linked to professional development or the "crisis of employability" (discussed in Moore, 2006) emerging from an aging and highly competitive South Korean labor market. Humanities programmes are adapting to this crisis by offering professional and technological tracks. Yet these South Korean programmes struggle, not unlike humanities programmes worldwide. The humanities in the higher education of South Korea have been repurposed in deference to their science and social science counterparts (Song, 2010). This repurposing mutes a distinct voice in the broader humanities community. If mobile learning and technology can invigorate the humanities in South Korea, then I am motivated to contribute to that process.

1.7: Ethical Considerations

There was a strict adherence to the British Educational Research Association's (BERA) Ethical Guidelines for Educational Research (2011). Evaluating mobile learning presents ethical problems "beyond those routinely associated with the study of people and technology, of ensuring their safety and informed cooperation" (Vavoula & Sharples, 2009). These ethical concerns are accelerated by the nature of data collection itself, which extends beyond the classroom and into the lived world and as such data collection can involve evidence of footprints

through that 'lived world'. As Vavoula & Sharples rightly suggest, these qualitative and quantitative elements suggest a conflation of objectivist and postmodern approaches that might prove ethically challenging.

An additional challenge emerges as the materials of these trajectories might reveal elements damaging to the graduate students' participation in their chosen field. An adherence to anonymity and privacy in all contributed data will serve to mitigate this possibility. A further ethical concern is the juxtaposition of this research analyzing informal and formal mobile learning use with more government-led top-down approaches to mobile learning to support disciplinary practice in South Korean universities. Data from the interviews has been transcribed and professionally translated and both versions will be made available upon request from IOEUCL. Further dissemination has taken place through a series of field notes, observations, and reflections on the author's website.

1.8: Overview of Thesis

The following presents a brief summary of each chapter in this thesis. Chapter 2 reviews the literature that examines empirical studies of mobile learning in the formal and informal contexts in South Korea and elsewhere. This is followed by a critique of empirical studies of community of practice theory in South Korea and beyond, which precedes a discussion of empirical studies using learning trajectories. A discussion demonstrates how the critiques of these sources informed this thesis.

Chapter 3 discusses theory, focusing on the positioning of mobile learning for this research, community of practice (Lave & Wenger, 1991) and learning trajectories (Wenger, 1998). Community of practice theory is used to analyze the disciplinary practices and participatory methods at work in South Korean higher education in

the humanities. Learning trajectories (Wenger, 1998) are used to explore the movements of these graduate students in relation to their respective communities and how these movements are evidenced through mobile technology use. Chapter 4 provides an overview of the South Korean informal and formal learning. South Korea has a long history of experimentation with mobile communication, which is described here. This chapter also identifies the dichotomy between formal mobile learning (generally a top-down model) and informal mobile learning (generally an organic model).

Chapter 5 provides a review of methodological approaches drawn on by this researcher to develop this research design. This includes an overview of mobile media models, mobile learning models, and designs that have been applied in the South Korean context. Following this review, the methodological design employed for this research is presented along with sampling designs, ethical considerations, and coding discussions. Chapter 6 discusses the pilot study and begins with a discussion on the data points used to focus the pilot project and their application to the larger research questions. This is followed by an analysis of the collected data, and design adjustments made to the research design to account for findings from the pilot project.

Chapter 7 discusses the vignettes that emerged from the main research study and the trajectories being evidenced. Chapter 8 draws out the themes emerging from these vignettes and the data overall, themes that begin to speak directly to the research questions posed for this thesis. Chapter 9 discusses the analysis of the main research study data and its application to the research questions, as well as a discussion of findings from the data. Chapter 10 provides a conclusion that discusses the findings from these studies and their application to the research

questions. This chapter goes on to provide broader applications to these findings and provides recommendations for further studies.

Chapter 2: Literature Review

This chapter reviews the literature related to this study and demonstrates the gaps in the literature that this thesis hopes to address. It begins with a discussion on mobile learning itself, how it has been empirically employed in past research, how that provides relevance to this thesis, and what gaps exist in the literature. This will involve two fields of mobile learning activity: the informal, best typified by the pioneering work of Hjorth in studies of informal mobile cultures and practices emerging from the Asia Pacific region, and formally as applied in higher education.

This chapter will then turn to a critical appraisal of how the community of practice literature has been employed, what findings and limitations have emerged as a result, and where the gaps in this research exist. In particular, this discussion attempts to chart the use of community of practice theory away from its original use as an analytical tool amidst a complex and contested social dynamic with its "original emphasis on context, process, social interaction, material practices, ambiguity, disagreement" (Amin & Roberts, 2008) towards its performative application as a means of stimulating the development of communities of practice, a process that has surfaced a host of limitations. The research charting this transition will be critically discussed. This will in turn be followed by a discussion of community of practice studies as applied in the Asia Pacific and Korean context, specifically and further identify the gaps in the literature that exist.

This discussion will be followed by a review of the literature regarding the use of learning trajectories in educational or organizational contexts and what gaps exist in the literature that this thesis is directly attempting to address. This is followed

by opportunities for further research, including the paucity of research related to mobility in the context of peripheral participation, mobility as presented in the South Korean context, and how multimemberships are managed through mobile technology.

This chapter will conclude with a discussion on what gaps exist in the literature, gaps that have begun to surface the research questions emerging from this research. These research questions are given more explicit form in later chapters of this thesis, but this review of literature should serve to establish the critical need of the research presented in this thesis, that is addressing significant gaps in the research related to community of practice theory and mobile learning and it is doing so in the under-researched context of South Korea.

2.1: Cultural Shifts from Europe to Asia: Mobile Learning

Pachler, Seipold, & Bachmair (2012) distinguish between the two prevalent types of mobile learning in terms of reference to the structures from which they emerge, namely from the top-down approach or the bottom-up approach. Bottom-up approaches are characterized by a general cost-savings as it relies on the learners' existing mobile technology and capitalizes on their existing practices for communicating. These bottom-up approaches tend to build connections between formal educational structures and informal practices. As such, they are particularly adept at fostering the types of mobile learning that this thesis is trying to observe, namely mobile learning that involves informal and formal practices. Top-down approaches are generally well-funded and officially endorsed (government or otherwise) models that introduce mobile learning and attempt to map it existing formal educational practice. The disadvantages of this approach, particularly to the South Korean context, is the disconnect between the formal practice being introduced and the informal practices involved with using the mobile technology

that had already existed (Pachler et al., 2012). This top-down, bottom-up distinction is critical for this thesis as it helps reveal the advantages of the bottom-up approach. It further reveals the friction that exists in the top-down approach, the dominant approach in South Korean universities, in mapping mobile use to formal practice for new modes of learning.

Within the UK & European context, much mobile learning generally ascribes to Frohberg, Goth & Schwabe's four categories of context: independent, formalized, physical, and socializing (2009). Independent refers to the disconnect between the learning environment and the current issue of learning; this is geographically independent learning (the anywhere of anytime/anywhere learning). Formalized activity generally refers to mobile learning taking place within a classroom or as part of a classroom activity. Physical context refers to the location being specific to the learning, i.e. a museum space. Socializing context involves socialization or learning through relationships. These categories are indeed useful constructs for classifying mobile learning activity; to some degree, they can all be found in mobile learning in the South Korean university context.

However, the issue of control is an aspect where shifts occur in the structure of mobile learning in the South Korean and UK/European context. Frohberg, Goth & Schwabe (2009) position control as an agent in the process of setting learning targets and developing meaningful processes for learning; it is, depending on the context, teacher or student centered. This continuum of control is reflected in the South Korean context as a primarily top-down model for the development of mobile learning that directly supplements formalized activity. In this South Korean context, control Socioculturally skews towards the teacher or organizational aspects of mobile learning. Yet, this continuum of control proves insufficient as a position for this research as the informal (where learner control is manifest) and

formal (where instructional control is manifest) are interwoven through a very specific sociocultural context, discussed in later chapters of this thesis.

Yet control remains instructional. Formal mobile learning in South Korea is a primarily top-down phenomena not only through formalized university experimentation, but also through government mandate. Informal, learner-driven mobile learning does exist and has flourished for many years, but the formal mobile learning developed by universities tends to support formalized university activity only. Frohberg, Goth & Schwabe's continuum of control is useful for analyzing activity in mobile learning in South Korea, but a more useful mechanism is put forth by Park (2011) in her classifications for mobile learning in terms of how they oscillate between individualized and socialized, and high and low transactional distance states of activity. This is mobile learning as defined in the South Korean context, where the university (the center of this transactional distance process) is positioned as the most active of agents in the process of coming to know through mobile learning.

2.2: Transactional Distance and Categorizing Mobile Learning

Park (2011) provides a simple model for categorizing not only the mobile learning literature presented in this chapter but also for capturing the activities being evidenced throughout the entire thesis. Learning activity is categorized according to its adherence to high vs. low transactional distance (structured vs. unstructured activity) and social vs. individualized learning. These categories were put forth by Park (2011) as part of an exploration of transactional distance theory and include the rigidity of the formal curricula, communication between instructor and learner, and the learner's role (autonomy in determining learning objectives and process), all of which correlate to Frohberg, Goth & Schwabe's continuum of control (2009). Transactional distance provides an incomplete, but applicable framework for

analyzing mobile learning in South Korean as it assumes, explicitly, that the university is at the center of the learning process and that learners oscillate towards and away from it in fields of activity. This is an assumption that this thesis directly looks to challenge, but it remains instructive precisely as it allows for an evidencing of movement within a larger social topology.

What Park provides, above all else, are categories that assist in charting the range of mobile learning in South Korean universities as a constant movement between high and low transactional distance and socialized and individualized activity. Learners consistently and, at times, simultaneously shift from one state to another in a process mediated by mobile technology. These categories provide a model for categorizing mobile activity in the South Korean context. It also provides this researcher the freedom to pursue, identify, observe, and analyze learning wherever it might take place, across the fluid boundaries of time, space, and informal and formal states of activity.

For the purposes of this thesis, Park's (2011) categorizations are adapted to formal, informal, socialized and individualized states of activity. Park's concept of high and low transactional distance has been adapted to formal (high transactional distance) and informal (low transactional distance) categorizations as this research study is less concerned with specific mobile applications (either created or adapted by the university, suggesting high transactional distance), but rather mobile technology use overall, which is positioned in this research as learning activity directly or indirectly related to graduate school interaction in the humanities. Since the mobile applications are de-emphasized, high and low transactional distance serves less a purpose than merely distinguishing between informal and formal activity with mobile technology use. These four categorizations attempt to identify the range of mobile technology use in learning in South Korean graduate students in the humanities. This thesis now turn its

attention to two of these categories, the informal and formal, identifying the prevalent research in these fields, particularly as it applies to the South Korean context.

2.3: Empirical Evidence: Mobile Learning Studies: Critique

It is important to note that due to the history of mobile learning, which if not fully mature is well beyond infancy, the scope of this review will be limited to those works that have direct application to this thesis. As such, studies that ascribe to earlier positions of mobile learning, those that focus predominantly on technological (learning *with* a specific technology), spatial (learning *anywhere*), and temporal (learning *anytime*) elements are largely removed as they do not, largely, demonstrate the space that this thesis is set to occupy.

This section attempts to demonstrate the range and significant empirical research conducted with mobile learning across the informal and formal fields and identify the gaps in that range. This thesis now turns its attention to the informal field of mobile learning, which as much of the literature would suggest, is *the* appropriate field of mobile learning as the learning taking place "does so under very different conditions from the formal learning context of education" (Laurillard, 2007). While this thesis disagrees with this position, particularly in that mobile technology and digital technology in general has unmoored many of the underlying relationships in formal education (faculty to student, student to university, and so forth) and as a result learning in the formal and informal spaces are blurring as well, it holds true that much of the mobile learning literature corresponds to the informal field. In short, this research attempts to mitigate, at least partially, the "unhelpful conceptual division between 'formal' and 'informal" in mobile learning (Pachler, Bachmair, & Cook, 2009, 15). Traxler (2007, 10) suggests that the evaluation of mobile learning is problematic because of the "noise" generated as a result of its

"personal, contextual, and situated" attributes (p. 10). Yet, it is this "noise" that this research is most eager to evidence suggesting as it does the movement between informal, formal, individualized, and socialized space. As such, this research grapples with methods for transforming this noise into signal.

This "unhelpful conceptual division" is mitigated in Kukulska-Hulme et al. (2011), detailing a large international research study conducted on learners' uses of mobile technology in master's and doctoral programmes in Australia, Hong Kong, Portugal, Sweden, and the United Kingdom. The findings detailed the range of receptive, productive, and communicative uses of mobile technology, including using mobile devices to capture ideas, for informal learning outside the university context, and for the more predictable uses such as navigation, scheduling, and so forth. As applied to this thesis, the three most valuable points drawn from this research are

1. Mobile technology is suitable for higher education, a point advanced in previous research but empirically presented here;
2. "Learners' choices in the midst of evolving social practices" suggests a dynamic interplay between informal and formal practices;
3. and there is a need for differentiating our understanding of this mobile technology use regionally, or a need to understand "the techno-cultural setting" (2011)

These three points all parallel the South Korean humanities context, a highly specific "techno-cultural setting"; as well as the dynamic interplay between informal and formal practices. This thesis builds on the research presented here by suggesting that beyond representing "learners' choices in the midst of evolving social practices", mobile technology is being used to manage the spectrum of

participation across the nexus of multimemberships (Wenger, 1998). The practices are both responses to and evidence of that management.

Motivation for mobile learning, often the subject of mobile learning research, is not a focus of the research presented in this thesis, yet remains instructive in that it provides capacity for further managing multimemberships; Jones et al. (2006, p. 251) detail research that identified motivating factors such as freedom, ownership, communication, fun, context, and continuity for using mobile technology for learning. This thesis attempts to build upon the context and continuity aspects of Jones et al. (2006) in establishing both the interactional context and the continuity involved in managing participation in multiple community memberships. Jones, Scanlon, & Clough (2013) advance into the informal further by suggesting the need for capacity for informal inquiry in the mobile learning context; while beneficial particularly in terms of generating learning activity from informal, open space, this thesis questions the validity of suggesting the informal space presents "more control over their learning goals and where motivation is often high"; while more control might be plausible, it is difficult to countenance the implied assertion that motivation is higher in the informal context, particularly as applied to the graduate students at the focus of this thesis.

Clough et al. (2009) detail a study of informal mobile learning and provide categorizations of the types of mobile technology uses that have been convincingly detailed elsewhere (Kukulska-Hulme et al., 2011). What Clough et al. provide, however, is an indication of the difficulties involved in researching mobile learning beyond receptiveness or motivation: learners aren't always aware that they have conducted a learning activity at all. When asked to provide details of collaborative learning "only 19% of Smartphone users who had used their devices to communicate with others felt they had collaborated" (2009, p. 105). This has

relevance to the South Korean context, where informal learning is not generally recognized as learning activity. While highlighting a few examples in this section, it is important to note that there is significant research detailing mobile learning in an informal context, but that methods for surfacing informal learning is problematic.

Much of this research extends into the media driven elements of mobile technology use. Mobile media studies (Farman, 2013 & 2012, for example) range from narrative and artistic practices emerging from mobile media, innovative location-based media activities, and game-based media practices. For example, de Silva & Hjorth (2009) provide a historical overview of the development of location-based mobile games that differentiates among game types and addressing the role of play itself in learning through mobile technology. Mobile gaming is included in the categorization of informal learning in this thesis, even if much of the literature wouldn't make so explicit a connection.

This literature is not dealt with in this literature review as media studies as such, but rather as attempts to surface these activities as informal learning (addressing the critique of Clough et al., 2009). This is a departure from the literature being reviewed, but is consistent with the research presented in this thesis in its attempt to chart activity across the formal, informal, socialized, and individualized spaces of mobile technology use. Yet, it is important to note how mobile technology is evolving many of the disciplinary fields under investigation in this research, namely Media Studies itself (as discussed in Watkins, Hjorth & Koskinen, 2012.) Research into this media-based informal mobile learning is quite prevalent in the South Korean context. As such, the focus now turns to South Korea.

While the mobile practices and informal mobile learning communities in South Korea are documented in earnest in Chapter 4, it is important to briefly review informal mobile learning studies applicable to this thesis. Much of this revolves around the pioneering work of Larissa Hjorth and her work documenting the informal mobile practices of South Korean communities and Northeast Asian communities. Hjorth & Kim (2005) documents a case study in Seoul involving informal mobile communities and surfaces the notion that the media being produced in these communities converges several rich research strands: the local informing the global and the role of mobile media in articulating and advancing these discourses of convergence. Hjorth (2007a) documents an ethnographic project involving 34 Korean university students asking them to document their camera phone practices, along with attendant interviews (which proved influential for this thesis methodologically). The study found that mobile photography was gendered in that it foregrounded a "type of gender performativity" and suggested how photography remains an artifact of community practice. Yoon's (2003) ethnographic study of young people's use of mobile phones in South Korea advances this position further by demonstrating how the mobile phones reinforce physical contact and exchange within informal communities. Hjorth (2007a) suggests how mobile games perform much the same community management work in the Asia-Pacific region in informal communities, and continues this exploration into mobile technology being used to reinforce informal communities in her study on informal communication using mobile media in a particular South Korean environment (2009d). All of these begin to surface practices of learning in the South Korean context.

It is within this intersection of mobile media and informal learning that broader concepts emerge, concepts that have influenced much of this thesis. Hjorth (2009e), in her study of Japan's *keitai shōsetsu* (novels made on and for the mobile

phone), has advanced “cartographies of personalisation,” which are topographies “marked by the interior, intimate, and contingent practices that can both challenge and reinforce gendered performativity around labour and intimacy.” These cartographies are extended into subsequent works and locales, (Pink & Hjorth, 2012), but their relevance to the literature of mobile learning is in their equation of mobile media practices with community and narrative; mobile media in the Asia-Pacific region is often used as an artifact in the process of community engagement. These practices generate evidence (media) that project a narrative. This thesis is advancing this equation further by suggesting that media practices are indeed learning practices in that they are expressions of narrative intent and community engagement. The hallmarks of these learning practices are the media being generated as a result of community engagement, the ‘common banality’ (Petersen, 2008) that is ordered by ‘vernacular creativity’ (Burgess, 2008).

Working through Park’s (2011) categories of mobile learning activity, this thesis now turns its attention to mobile learning as applied to formal fields of higher education. While earlier European mobile learning projects (detailed extensively in Kukulska-Hulme, 2011, Quinn, 2011 & Park, 2011, to name but a few) are well documented, there is less research directed towards formal mobile learning in the Korean, and even Asian-Pacific context, suggesting a need for research in these areas. Much of the literature related to Korean mobile learning involves a focus on activities that are fairly conventional, including using mobile learning for language learning (Nah, White & Sussex, 2008). Much mobile learning has been applied to school curricula to promote self-directed and creative learning. Lee (2005) investigated the impact of mobile technologies on teacher and student exchanges in the Korean context, while Min & Choi (2006) developed a web-based mobile system to support stages of field learning and reflective practice. Ryu & Lee (2005) examined the use of SMS as a means of stimulating discussion

board postings in support of a course. All of this earlier research suggested the impact and receptiveness of mobile learning in the formal context without indicating whether academic practice had changed as a result, a major point of address by this thesis.

One learning practice in particular has generated attention in the mobile learning research. Composition performed through mobile technology to support formal and informal learning has been reviewed quite extensively in the academic literature. Most of this review has taken place through hybrid online environments with supported mobile applications, such as the Korean indigenous social media and blogging applications of Cyworld, Daum, and Naver. Research to date has focused on composition that fosters community interaction (Chun et al., 2008), asserts identity management in terms of self-presentation (Jung, Youn & McClung, 2007), and how mobile technology is used for composition through social networking and how that represents emerging practice in higher education (Haddon & Kim, 2007 and Kim, H.S., 2012). Further research is necessary to determine to what extent composition in these environments is taking place through mobile technology and what the nature of that composition might entail as it could suggest an iterated academic practice, or evidence of the informal structuring the formal.

Evidence of the use of media in mobile blogging environments and the explicit design of mobile functionality (Choi, E.Y. & Choi, H., 2010), mobile tools, and mobile environments (Kim, H.S., 2011) to support mobile media creation suggests their use by Korean university students. Ok, H.R. (2008) and Hjorth (2007b) outline this process of informal media capture and creation and its effect on community culture and processes, which suggests, for the purposes of this thesis, that mobile composition conducted in formal learning in the in South Korea would be best

served with an alignment with informal media practices presented through social media. Ok (2011) provides evidence that composition of this sort does not represent a departure from existing cultural or academic practice, but rather affirms the tendency of Korean learners to use blogs as a means to "build and maintain social relationships" rather than as exclusively academic, information-sharing spaces (p.326). It is significant for the purposes of this study that composition in South Korea is associated with socialized activity. Hence, there is a tendency for Korean blogs to be highly social in design and composition.

From a disciplinary perspective, mobile technology is used to augment activity by providing opportunity for increased socialized interaction, as a tool for data collection (in the field, media capture, etc.), and composition. Mobile technology also provides mechanisms for dissemination of research to the larger research community as well as to the general public (Jung, D.E., 2012); further, it has sparked pedagogical changes in History and Cultural Heritage instruction (Han, K.C., 2011).

Yet, there are significant gaps in the literature related to formal mobile learning in higher education. These gaps include a preponderance on mobile media as new media, divorced from the practices that created it. Further, there is a preponderance on mobile technology or mobile learning acceptance in the formal fields of higher education, rather than holistic accounts of practice involving multimemberships. As such, there is a need for research that speaks to how mobile technology is used across the spectrum of these multimemberships, from the formal to the informal, and from the individualized to the socialized.

This thesis now turns to the empirical literature related to both community of practice theory and learning trajectories, to see how these have been deployed in studies, and how this relates to its application in this thesis in relation to the

activities of these graduate students.

2.4: Community of Practice

Community of practice theory (Lave & Wenger, 1991), which emerged from Situated Learning, a theory that positions learning "as a social process and not solely in the learner's head", has generated a wealth of critical literature. Much of its theoretical positions are discussed in the following chapter, but it is important to note at the onset that this is "a framework of social practice theory, in which the production, transformation, and change in the identities of persons, knowledgeable skill in practice, and communities of practice are realized in the lived-in world of engagement in everyday activity" (p. 47). Learning, in community of practice theory, is a fluid exchange between identities, practices, and communities. As such, it is explicitly social and the reviewed literature ascribes to this position. Community of practice theory emerged from studies of apprenticeships in particular trades emphasizing "the diversity of historical forms, cultural traditions, and modes of production in which apprenticeship is found" (p. 63). It is in this focus on apprenticeship, a structure of tacit practices, modeling, and direct community member access, that much of its subsequent critiques were based.

Many of the limitations of community of practice theory, this thesis argues, emerge from their misappropriation in contexts for which it is unsuited, with Cox (2005) going so far to say that the "applicability of the concept to the heavily individualized and tightly managed work of the twenty first century is questionable." The granular work of the twenty first century isn't absolute, however; communities exist where tacit understanding and practices are learned, if at all, through community participation. Wenger's original intent was to position communities of practice as a series of informal relations and knowledge gleaned

through social activity that has a direct impact on individual identity (2005). This initial focus on identity as community member gave way to performative applications of the theory (Gourlay, 2009; Contu & Willmott, 2003; Duguid, 2008; and Lave, 2008). This performative element is often related to the deployment of community of practice theory in knowledge management (KM) organizations, an "increasingly homogeneous and instrumentalist use of the term communities of practice to encapsulate 'knowing in action'" (Amin & Roberts, 2008). Many organizations, particularly in the early half of the 2000s (Li et al., 2009), have employed the theory to stimulate the development of communities of practice to allow for their more 'productive' elements: knowledge sharing, resiliency, self-governance, and ongoing professional development. This performative turn negates much of the analytical capacity of the theory itself.

Brown & Duguid (1991) present communities of practice as applied to organizational learning by demonstrating that the theory is useful as a means of intersecting working, learning, and innovating at the organizational level, an intersection that gave way to performative elements. Both expanding and critiquing on their previous work, Brown & Duguid (2001) suggest that a greater emphasis must be placed on understanding the knowledge base of an organization as partly emerging from outside the organization itself, one that "draws on its embeddedness in broader structures" (p. 209). These broader structures suggest a greater applicability for the theory across *fields* as the discrete practices employed by each community will most readily be advanced "across the division of labor" rather than organizationally, a critique that has bearing on the application of the theory to academic communities. Contu & Willmott (2000) extend this critique further by arguing that 'control' over the infrastructural elements of community practice is 'slippage' from Wenger's earlier representation of learning as *praxis* to learning as *regulation* and *performance*. The

infrastructural elements that Contu & Willmott refer to are drawn from Wenger himself (2000) and implicitly presented as controllable entities, adding to this shift in performativity: organizing events, developing leadership, fostering relationships, initiating learning projects, and producing community artifacts. Wenger, McDermott, & Snyder (2002) further this performativity by discussing how communities of practice can be 'cultivated' within organizations. Vann & Bowker (2001) go so far as to critique the original conception of communities of practice "as a free floating "natural" set of relationships, with their own internal logic" to communities "heavily structured by the task and formal controls" implicit to the organizational environment. This position suggests that communities of practice are bound by "formal controls" more than the relationships and emergent identities suggested therein, a position at odds with the original presentation of communities of practice (Lave & Wenger, 1991) and with the position of learning as presented in this thesis.

As such, attention shifts to community of practice theory in academic communities, a discussion continued in the following chapter. Trowler (1998), in a study on the structural effects of rapid growth on a British university from 1991-1996, suggests that the epistemological focus of the disciplines, or what Wenger might refer to as the "shared domain" (1998) of the community of practice, doesn't necessarily predict the behavior of the academic community members as it negates "the importance of social actors' power to influence structure" (p.74). Viewing these academic communities of practice as being driven solely by epistemological considerations is a positivist approach at odds with much community learning theory. Yet, a push away from epistemology and towards community or participant activity is problematic. Klein et al. (2005) picks up this critique by suggesting that communities of practice in higher education are "stratified knowledge-sharing communities" in which reverence, if not reality, is

paid to the apprenticeship model most readily personified through the faculty-student relationship. It is in this epistemological decoupling and participant stratification that we begin to see the first ruptures with positioning the academic community as a community of practice and the limitations of the approach overall. A community of practice, in these critiques, is reduced into the "academic tribes" of Beecher & Trowler (2001), where affinities and idiosyncratic practices of group members cohere into a group with less rigid structure than a community of practice suggests.

Kimble, Hidlreth, & Bourdon (2008) address teachers, a rich vein of the literature in that it most readily adapts to Lave & Wenger's initial position of apprenticeship. Teachers employ a shared repertoire, which includes "routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions or concepts that the community has produced or adopted" (Wenger, 1998, p.83); yet much of the learning of teaching is tacit and many of the emergent practices are idiosyncratic. Kimble, Hidlreth, & Bourdon's (2008) remains unconvincing in that it resorts to the performative applications so manifest in the organizational research; they suggest that these communities can be created and as such undercut the analytical potential of the theory itself in determining the nature of teaching as an extension of community participation and practice. A more convincing approach is found in Herrington et al. (2008), which employs community of practice theory as it was originally envisioned: as an analytical rather than performative tool. This study revolved around the coming together of a group of teacher-educators in a British university to form a readers' and writers' group over an 18-month period, employing community of practice theory to analyze the impact on their personal and professional identities. Koeglreiter, Torlina, & Smith (2008) continue with this exploration into higher education with a study of an Australian self-directed community of practice which attempts to span the community of practice with the

larger university context, noting the multidimensional and cultural nature of such a move, a more analytical application of the theory than much of the literature attempts.

Carr et al. (2008) explore teaching with technology as an extension of community practice in higher education, yet ascribes to elements of the performative trope by suggesting how community of practice theory might "grow" active educator communities of practice within the university. Dobozy (2012) furthers this performative trend in a discussion of a professional development model for university educators at an Australian university; in this model, communities of practice can be stimulated through design. This design model is advanced further in Chism, Lees, & Evenbeck (2002) as a means for developing innovative practices in faculty educators, but both suffer from a performative focus.

Warhurst (2006) draws closer to Lave & Wenger's original position of community of practice theory in an exploration of participatory peer learning within a community of new university teachers, and in particular community learning as a process of peripheral participation and social meaning-making, a refreshingly analytical perspective. Continuing with the peripheral participation of new faculty's entry into higher education, Trowler & Knight (2000) in their qualitative study of 24 entrants to the academic profession along with 50 faculty members suggesting that while a useful theory for theorizing meaning from the data, the term community itself "can mislead those who are mesmerized by the metaphor" (p.28), a verdict that might be applied to much of the performative literature critiqued in this chapter. Yet, community of practice theory proves valid, if conflictive, as evidenced by the following:

> "if we are to understand how they "come to know" about the rules of their

> new workplaces, we need to treat localized activity systems or communities of practice as important sites in the acquisition, enactment, and creation of culture and knowledgeability, and to reflect upon the processes involved in identity-construction" (p.28).

If community as a metaphor can mislead, Gourlay (2009) extends this critique to suggest that newcomers to the academic community are not entering a community of practice at all, due to the lack of the core characteristics of shared repertoire, mutural endeavor, and expert-novice interaction, a critique echoed in Lea (2005). In this study of new lecturers in higher education, the lack of these core characteristics created attendant feelings of confusion, inauthenticity, and isolation as the "rules for progress and success are reported as unclear and opaque" (Gourlay, 2009), a process that limits the applicability of community of practice in analyzing transitions into academic communities. These attendant feelings aren't limited to new lecturers, but rather to many of the peripheral communities that participate in an academic communities of practice, as Janson & Howard's (2004) study of PhD students in a New Zealand university "becoming" a community of practice details. It suggests that the community of practice isn't exclusive to the discipline, echoing Trowler's (1998) push away from epistemological focus, but rather to the shared experience of being newcomers. Tobbell, O'Donnell, & Zammit (2010) detail the results of a study in five UK universities of the transitions of new postgraduate students and concluded that there are a multiplicity of identities and communities that contribute to this transition; this is a finding that the research presented in this thesis attempts to expand by focusing on the multimemberships involved in learning in the humanities.

Much of this focus on shared experience in light of the difficulties in transitioning

into the academic community is found in the study of O'Donnell & Tobbell (2007) on the transition of adult students to higher education. In a qualitative study, adult students identified as peripheral participants, the tact and opaque nature of university practices and procedures undermined the legitimacy of their participation, a process partially mediated by a diverse set of personal relationships with cohorts and other members of the academic community. This undermined legitimacy can lead to subversion and sabotage, a critique of community of practice theory advanced by Gourlay (2009) in the following:

> "there is no way in the theory to explain why a community of practice forms rather than "colleagues co-operating to bend the rules in order to get work done, to manage the work-effort bargain to their advantage, to play games, organize to identify and promote their own interests at work, or to engage in community sanctioned acts of sabotage." (Gourlay, 1999, p.9)

This thesis suggests that subversion isn't inherently contradictory to a community of practice, but rather proves instructive when charting movement (learning trajectory) as opposed to membership (community of practice theory).

While more critiques of community of practice theory exist, particularly in regards to academic writing, tacit practices, and vague delineations of community boundaries, the preceding sections should serve to establish the gaps in the literature that this thesis is attempting to address. These gaps involve the South Korean context itself, where there is little research undertaken that employs community of practice theory to determine the transitions or movements of peripheral community participants. Community of practice theory in South Korean research tends towards the performative elements consistent with application in knowledge management organizations, particularly as it involves knowledge

sharing or the use of technology to assist in community development (Jeon, Kim, & Koh, 2011; Jang et al., 2008 & Kang, Bonk, & Kim, 2011). What is lacking in the literature related to the South Korean context is what this thesis explicitly attempts to address: an analytical, rather than performative, application of community of practice theory to understand the complex interactions with academic communities in the humanities by these graduate students.

2.5: Learning Trajectories

Learning trajectories begin to account for movements both within and outside the boundaries of the community under investigation. Learning trajectories were originally conceived in the context of community of practice theory as evidence of evolving identities emerging, at least partly, as a result of community participation. Identity, Wenger argues, is temporal, ongoing, more complex than linear notions of time, and identified in respect "to the interaction of multiple convergent and divergent trajectories" (1998, p. 154). These trajectories are neither absolute, nor transverse a fixed course; each "has a momentum of its own in addition to a field of influences" (p.155). Activity is a point, or event, on a larger trajectory which aggregates into evidence of a shifting identity in relation to a particular community; the events themselves are "defined by the current engagement they afford, as well as by their location on a trajectory" (p. 155).

The learning trajectories defined by Wenger (p. 154) are as follows (drawn from Oliver & Carr, 2009):

> "peripheral trajectories (which provide community access but never lead to full membership), inbound trajectories (which move from peripheral participation to identification with the community), insider trajectories (the ongoing renegotiation of identity within a community), boundary

> trajectories (involving participation in more than one community, which may lead to links being established or practices shared) and outbound trajectories (which involve leaving one identity behind in order to take up another)."

Pragmatically, learning trajectories begin to address many of the limitations of community of practice theory itself, including surfacing the effects of tacit practice, confusion, inauthenticity, and isolation (Gourlay, 2011) on an identity in relation to a community. They begin to foreground the role of peripherality, a focus of this thesis, by including "paths not taken, connections overlooked, choices taken for granted" which "can easily become marginalized within established regimes of competence" (Wenger, 1998, p. 216). Learning trajectories broaden the theoretical gaze to include the peripheral activities occurring outside the frame of community boundary. They also avoid the performative turn to which community of practice theory was subject as a result of Wenger's own research trajectory, nicely summarized by Li et al. (2009) in the following:

> "Lave and Wenger's earliest publication (1991) centred on the interactions between novices and experts, and the process by which newcomers create a professional identity. In the 1998 book, the focus had shifted to personal growth and the trajectory of individuals' participation within a group (i.e., peripheral versus core participation). The focus then changed again in 2002 when CoP was applied as a managerial tool for improving an organization's competitiveness" (p.11).

Yet, learning trajectories are bound to communities, in the peripheral or in the main, rather than theorizing movement *across* topologies and multimemberships. They include their own "set of models for negotiating trajectories" which Wenger

refers to as “paradigmatic trajectories” which “embody the history of the community through the very participation and identities of practitioners” (Wenger, p.156). While not subject to the breadth of research that community of practice theory enjoys, learning trajectories have produced research that speaks empirically to their employ.

A necessary expansion of the scope of learning trajectories is provided by Kanno & Norton (2003) in their discussion of the role of imagination on the shape of learning trajectories as evidenced through “imagined communities”: “such communities include future relationships that exist only in the learner’s imagination as well as affiliations - such as nationhood or even transnational communities” (p. 242). The example provided by the authors is instructive in that it accounts for peripheral practice that *may* lead to community membership in the future, but more importantly proves revealing of the overall trajectory of the learners themselves:

> “when a young Japanese man studying fashion design in Tokyo starts to learn English, he may envision himself as one of the most successful fashion designers in New York. In his imagination, he is a recognized member of an international fashion community, and English is seen as one of the important means of gaining this future affiliation.’

Even without direct engagement with the community itself, this individual has generated evidence to suggest that the imagined community is exerting influence over his activity and, as such, his trajectory.

Dahlgren et al. (2006) present an 18-month longitudinal study at Linköping University in Sweden that focused on the transition from higher education to

working life and presented this as a transition from one community of practice to another. While suggesting that particular disciplines are more apt to produce transitions from academic to professional life, more importantly is the focus on identifying the salient characteristics of identity, knowledge formation, discourses, and disciplinary structure on professional practice. Coryell et al. (2013) provide parallels in their study of adult PhD students and their transition into roles as educational researchers, noting how reflective practices were employed to mitigate the peripheral effects of tension, conflict, and drama in this process. Gorard (2006) presents a study involving 1000 household interviews and 110 interviews with adults in England and Wales in 2002, to chart participation in formal learning as a learning trajectory influenced by socioeconomic factors, the study focused on "whether people continued with formal education or training within one year of reaching school-leaving age, and whether they then participated in any later education or training" (p. 196). The findings suggest that non-participation in formal learning is partly a result of misaligned trajectories, that of the formal community and that of the individual in their professional or personal communities. While limited in its scope towards formal education and the sociocultural and emotional barriers that inhibit this participation, it represents an important progression in the application of learning trajectories.

Gorard et al. (2001) present the results of large-scale study of patterns of adult participation in education and training as part of the ESRC Learning Society Programme. Through analysis of survey and interview data, the study demonstrates that agency (choice) and community structure are possibly compatible as evidenced through learning trajectories. Further, the research foregrounds transitional participation, or the types of peripheral participation being suggested by the graduate students in this thesis. What this research suggests beyond this transitional participation is directly a result of community

structuring, a point that has applicability to higher education and its disciplinary structure. Provisions aren't made for legitimizing peripheral participation precisely because the structure impedes many who would otherwise participate, generating a small enough pool of peripheral participants as to render them insignificant in terms of evolving community practice. Edwards & Mackenzie (2005) bend but do not adhere to the performative critiques of community of practice theory in their study of participants in a day centre run by social services or a charity that clients may attend on an informal basis, by suggesting that interventions aimed at preventing social exclusion need to be informed by the analysis of the trajectories of participation being evidenced. From the Korean perspective, Lee S. (2014) discussing the learning trajectories being evidenced by Korean mature women and their motivation and attempts to access higher education, concluding that many of the trajectories being evidenced are generationally specific in keeping with the age hierarchies of the Korean context.

While instructive, much of the research implicitly positions learning trajectories as uniformly present, that any aggregation of learning activity and community relation will generate evidence of a learning trajectory, an almost positivist assertion that negates the complexities of the intersection of community, activity, intent, and evolving identity on any sort of learning trajectory. Much of this further negates the diversity of practices that learners use to navigate multimemberships, positioning learning trajectories as monolithic applications of practice rather than the "interaction of multiple convergent and divergent trajectories" (Wenger, 1998, p. 154).

Oliver & Carr (2009) explore aspects of learning trajectories in their study of virtual worlds and in particular World of Warcraft to determine, explicitly, how and what people learn from online games. Finding evidence of all types of the

learning trajectories articulated by Wenger (inbound, insider, peripheral, boundary, and outbound), the research also surfaced evidence of the conflict and reconciliation necessary to maintain memberships in multiple communities simultaneously, confirming to some degree the applicability of community of practice theory and learning trajectories as a model for analyzing learning amidst a series of community engagements structured by technology. Aspects of learning trajectories appear and the more tacit and contested aspects of community of practice theory, particularly in legitimizing peripheral participation, reappear in Carr, Oliver, & Burn's (2010) study of engagements in Second Life, an online virtual reality environment. This further suggests that learning trajectories have potential for analyzing the movements of graduate students through mobile technology, as this thesis attempts to do.

Further work suggests that conflict can be technological, a position put forth by Gourlay & Oliver (2013) in their research with longitudinal multimodal journaling by 12 students over nine months. As "disruption frequently arose from the well-established technologies that the institution provided and expected students to use, rather than from 'bringing their own devices' – devices which they were perfectly capable of using successfully in other setting", peripheral practices emerged as a result to reconcile this conflict. While not specifically related to learning trajectories, these conflict reconciliation practices are instructive in charting engagement with a particular community as they are the sort of hybridized practices that might signal movements between multimemberships.

Yet despite the research presented in this section, critical literature related to learning trajectories overall and in the East Asian context is limited. Further is the application of mobile technology to the process of surfacing and shaping these learning trajectories. As such, there are gaps in the literature related to learning

trajectories as evidenced and structured through mobile technology, and learning trajectories emerging from within the sociocultural specifics of the South Korean context.

2.6: Multimemberships

The nexus of multimembership is a facet of community of practice theory that poses relevance to this thesis; however, it should be positioned not as a separate theoretical construct but as an extension and a necessary repositioning of the individual to the foreground of community practice. The nexus of multimembership is, essentially, the space from which a connected group or series of trajectories and community engagements are managed. The nexus of multimembership is inherently and irrevocably related to the transformation of identity and the reconciliation necessary to maintain a viable identity across communities of practice. As presented by Wenger (1998, p.159): the nexus of multimembership and identity itself is "more than just a single trajectory", but rather a series of trajectories emerging as a result of participation in diverse communities.

Pragmatically, the nexus of multimembership provides a mechanism to broaden the analytically gaze away from the practices and centering movements of one community of practice, or of landscapes of practice (Wenger-Trayner & Wenger-Trayner, 2014) around marginally connected communities of practice, to a topology that does not presuppose the predominance of one community over another. It is being broadened further still to include communities that might not qualify as communities of practice as the literature has presented it: the social and highly informal communities that structure the hierarchical and highly interconnected South Korean landscape. These are managed alongside the

communities of practice; they too require significant reconciliation in movements from community to community.

Yet, it is important to avoid reductionism in the application of the nexus of multimembership as it "does not merge the specific trajectories we form in our various communities of practice into one; but neither does it decompose our identity into distinct trajectories in each community" (1998, p.159). The nexus of multimemberships suggests a fluid yet discrete identity emerging across community participation, one that adapts, but does not reconstitute completely into the demands of any individual community of practice. It is inherently a contested and multiple construct as "multiple trajectories become part of each other, whether they clash or reinforce each other" (p.159), but not inherently a fractured one as individuals maintain, or hope to maintain, an overall identity that is influenced but not completely governed by any one community of practice.

Most of the literature employing this nexus of multimembership adheres to Wenger's original position: that the nexus of multimembership is about the presentation, the reconciliation, and the evolution of identity. Reconciliation involves the effort necessary to reconcile our different forms of membership. Graduate students are peripheral members in their disciplinary communities as well as their professional communities and often the practices involved in participation conflict.

> "Different practices can make competing demands that are difficult to combine into an experience that corresponds to a single identity. In particular: 1) different ways of engaging in practice may reflect different forms of individuality 2) different forms of accountability may call for different responses to the same circumstances 3) elements of one

> repertoire may be quite inappropriate, incomprehensible, or even offensive in another community. Reconciling these aspects of competence demands more than just learning the rules of what to do when. It requires the construction of an identity that can include these different meanings and forms of participation into one nexus (p. 159-160).

This identity reconciliation accounts for much of the literature, although few studies in the physical or virtual world have considered the role of the nexus of multimembership as a product of memberships in multiple communities that span academic, professional, or informal fields.

A noticeable exception is Nelson & Temples' (2011) study of two female graduate students in applied linguistics taking an internet-based intercultural communication course. The students were attempting to reconcile their participation in this course along with their involvement in their own university study, their informal communities, the linguistic and cultural divides encountered as a result, and their burgeoning identity across the nexus of multimembership. The study reinforces much of Wenger's work: the two possible outcomes of these reconciliation efforts are either to reinforce or to clash (Wenger, p. 159). Although the study size warrants caution as to its applicability across contexts, it does demonstrate the potential of positioning the nexus of multimembership so squarely at the center of the individual and community activity.

A further exception is Haneda's (2005) study of Japanese language learners in universities in multiethnic Canada, suggesting that their investment in learning Japanese was "formed at a next of multimembership and was intricately connected to their changing identities"; further, it was tied to their perception of the value of learning Japanese for the participation in a particular community. As

such, the identity at the heart of the nexus of multimembership is positioned as a product of *negotiated* memberships in past and present communities and *desired* memberships in future communities. This study illustrates the effectiveness of identifying the nexus of multimembership and the multiple trajectories evidenced therein through a focus on observable practice. In this instance, Japanese isn't merely a practice that provides agency for communication, it is partly the identity itself.

Nyström (2009) discusses the development of professional identity as the interplay between the personal and professional in a study on student and novice professional psychologists and political scientists, as they transition from students to professionals. The study reinforced the position advanced in this thesis and discussed explicitly in Nelson & Temples (2011) of the need for repositioning the focus of analytical activity to the trajectories of the learner rather than from within the community itself, a redress to the *a priori* assumption of the supremacy of the community of practice in the activity being observed.

Nyström also provided a necessary sophistication to the nexus of multimembership by identifying the discrete identities that emerge as a result of multimemberships; in particular, this research suggests that Wenger's (1998) original position on the nexus of multimembership is insufficient as it doesn't account for suppression: "professional identity is also a process of actively sorting out, or downplaying, some communities at the expense of others in order to focus attention" (Nyström, 2009, p.15). Thus, the idea of managing multimemberships becomes a matter of marshalling resources towards a particular community while suppressing the resources directed at another. Research can now observe not only the management of identity and multimemberships, but also how engagements

with a particular community are deliberate and effortful, a strong move away from the positivism of community over agency.

Anderson & McCune (2013) build on Nyström's study and apply it specifically to higher education with a focus on undergraduate students' movements in the "spaces of the in-between" that characterize learning communities in universities. Anderson & McCune suggest that the capacity for managing multimemberships is limited by the lack of "hybrid discourses" and "transitional spaces", and calls on the academy for their development. Studies that employ the nexus of multimembership as a peripheral element include Morita's (2004) study of six language teachers from Japan as they attempt to reconcile their multimemberships in their new communities of practice and Lu & Nelson's (2008) study of Chinese doctoral students managing their multimemberships in US higher education. Both forefront the role of linguistic impediments to identity and participation within a community of practice. This and subsequent research related to the intersection of language-based education, transnational identities, and higher education are suggestive of the potential of employing the nexus of multimembership as a means of foregrounding individual agency and activity.

2.7: Gaps in the Literature

Aside from the implicit elements of Oliver & Carr (2009)'s study in relation to the nexus of multimemberships, and Nelson & Temples (2011) study on an online course, there is little literature dedicated to how learners are managing these multimemberships, participating in acts of reconciliation, and evidencing trajectories through mobile technology, suggesting a gap in the literature. Tangentially, Norman et al. (2015) come closest in their four-month investigation of educational technology students in university using social media through mobile technology to manage and manipulate a variety of roles (lurkers, coaches,

etc.) towards centering or distancing from particular learning discussions, providing a loose parallel to the research undertaken in this thesis. Yet ultimately this research is focused on specific communities rather than larger topologies of activity.

Beyond the gaps in the literature related to the use of mobile technology to manage and structure the trajectories within the nexus of multimembership, a significant gap in the literature is how this process of managing multimemberships and engaging in community practice is manifest in the South Korean context. It is a context that enjoys complete saturation of mobile technology at 109% with 56 million mobile subscriptions for approximately 51 million people (We Are Social, 2015), and which saw the emergence of mobile communities emerging in the late 1990s.

These are discussed in detail later in this thesis, but it is important to note that the learning process, with all its mobile technology uses, informal and formal practices, and multimemberships, is filtered through a sociocultural Korean context. It undergoes, or emerges from, a "retraditionalization" (Yoon, 2003) of South Korean practice through a mobile medium. It would be erroneous to minimize the impact of this process of retraditionalization on the subsequent learning trajectories (Wenger, 1998), nor would it be reasonable to expect the complexity of this process to be represented in the research literature. As such, the largest gaps in the literature that this thesis attempts to address are: analyzing how mobile technology is used to manage the nexus of multimembership and its attendant learning trajectories; and analyzing how this is done in the South Korean context in relation to communities in which these students participate, particularly the disciplines of the humanities.

Further gaps in the literature relate to South Korean peripheral participation and the mobilities therein in terms of community participation. Although some studies have spoken to the role of mobility within a particular sociocultural context, very few have attempted to situate these studies within a technological context, with Hjorth's (2007a) study of mobile gaming in the Asian-Pacific region as a means of evidencing mobility an exception. This thesis looks to extend many of the informal learning and mobile media explorations undertaken by Hjorth (2013, 2009a, and so forth), Kim O.K. (2011), and Yoon (2006a, 2006b 2003) and explore their connection to formal communities and throughout the nexus of multimembership, without positioning any one community at the fore of learning trajectory.

Gaps in the literature raise questions surrounding how South Koreans use mobile technology to manage their participation in their multimemberships, what trajectories are being evidenced by this activity and how all of this is structured by South Korean sociocultural practice itself. This thesis now turns its attention to how theory might support this thesis in addressing these gaps.

Chapter 3: Theory

This chapter addresses several discrete, yet complementary, strands of literature. To begin, it includes a critique of research surrounding the learning context generated as a result of technology use. This section serves as a foundation from which to explore the mobile learning literature itself: how it has been defined, how it has migrated away from technological or temporal determinism, how this thesis is positioning it, and what types of learning contexts are enacted as a result of mobile technology use.

This chapter then turns towards a definition and subsequent critical appraisal of community of practice theory itself, and in particular its limitations as applied to a formal learning context. This is followed by a critical discussion of learning trajectories, which forms a core service to the research presented in this thesis. These appraisals are then followed by a discussion on how this thesis is employing the mobile learning definition, in particular in its attempt to emphasize shifts in habitus, particular aspects of community of practice theory and, more explicitly, learning trajectories to chart movement in relation to a community, and social topologies to identify the types of space being transversed by these graduate students. As this forms the theoretical foundation of this thesis, this theoretical framework will be detailed and justifications for its necessity will be presented. This chapter concludes with a discussion on how the literature review and the theoretical framework coalesce into the research questions being advanced in this thesis.

3.1: Focus on Coming to Know

Throughout this literature review, there is an explicit attempt to link mobile activity amongst graduate students in South Korea to a larger process of coming

to know, a process whereby meaning is constructed through the use and mastery of a number of different tools: technological, intellectual, and physical (Saljo, 1999). Mobile learning in this context is related to making meaning in the larger context of the communities managed by these students through mobile technology. It is less concerned with formalized outputs or assessment consistent with participation in disciplinary communities, but rather with the practices being mediated by mobile technology that generate meaning for the humanities learner. Mobile learning as such represents one field in a larger environment of context.

Within this context, it is important to foreground the understanding that learning occurs in and subsequently produces context in a fluid cycle (Sharples, Taylor & Vavoula, 2007). This produced context routinely evolves disciplinary practice as produced in mobile technology in higher education in South Korea. The process of creating new understanding in the humanities irrevocably evolves the practices in the humanities that helped generate that understanding. This is a fluid, dynamic landscape of learning and one that presupposes consistent change: change in practice, in context, and in the use of technologies. Yet this change in context has proven highly resilient to consistent positioning in the literature.

This thesis presupposes that disciplinary activity in the humanities mediated through mobile technology is a constant series of movements between informal and formal learning, and with highly socialized and isolated spheres of activity (Park, 2011). This thesis presumes that graduate students move between technologies and between communities consistently. As such, the context being generated as a result is dynamic that it becomes relative to the activity being performed. While concepts exist that attempt to encapsulate these movements, they prove insufficient in their current evolution to account for how activity

mediated through technology affects movement towards or away a particular community.

This thesis is primarily concerned with trajectory, or aggregations of activity, materials, and technology across informal, formal, socialized, and individual learning. It is important to note that this thesis emphasizes a continuum of meaning-making across contexts and traditional dichotomies of informal and formal, public and private, individual and social. It attempts to surface the impediments to this continuum posed by the "semipermeable membrane" (Potter, 2012), or "liquid" spaces (Land et al., 2014) that must be transversed by these graduate students to generate meaning across communities These "liquid" spaces, or movements of liminality whereby the student transforms and is transformed leading to a passage to one community or another are particularly problematic in the context of the research described in this thesis: that of consistent movements through a series of multimemberships by graduate students both managed and structured by mobile technology. If this environment is liquid (and it is presupposed in this thesis to be so), then the movements and attendant practices are so as well. If transformation occurs, it is iterative and ubiquitous. By regulating the inquiry to a particular community, research struggles to conceive that these liquid spaces leading to multiple community engagements are transversed routinely and with effort.

Yet *liquid* is particularly apt when structured by mobile technology: a discussion started in a face to face classroom is carried on and subsequently managed through social, learning artifacts are created as mobile media, informal learning practices orient and navigate unfamiliarity, social communities provide resiliency and feedback, and knowledge is disseminated back through the learning community through mobile technology. Many of these mobile spaces are informal

environments which have been appropriated for formal disciplinary use. Formal discussions around disciplinary content are brought to these informal spaces, discussed, socially negotiated, reflected on, assembled, and disseminated. Learners engage through social practices and disengage to participate in individualized ones. These discussions, compositions, and media content are learning resources, "...student artifacts, students' online interaction" that are circulated through the graduate students' communities in an evolving process of coming to know (Wong, 2012). This continuum of activity is mediated through and structured by mobile technology, but it is a fluid context of engagement. Applications sit in the same visual field on the mobile device, informal and formal threads in messaging applications straddle one another, alerts on lock screens from formal or informal activities reside in close contextual proximity. Community boundaries are blurred or broadened as a result of this technological fluidity. As such, positions of mobile learning that are technologically (learning with mobile technology), spatially (anywhere), and temporally (anytime) deterministic fall short; they fail to account for these ever shifting iterations of context.

Despite this fluidity, orientation is maintained through contextuality. Mobile technology foregrounds the understanding that context and practice are irrevocably linked. Practice assumes the manipulation of context for meaning. Context, in turn, assumes some level of engagement. As such, contextuality "is a relational property that holds between objects and activities" and is specific to a particular activity being performed by the individual or the learning community (Dourish, 2004). Context becomes an interactional rather than a representational issue (2004), one that assumes an active process of meaning-making occurring in a dynamic environment. Mobile learning activity encapsulates these hallmarks of interactional context; it has elements of dialogue, composition, mediation, dissemination, review, and reflection. More importantly, context, according to

Dourish, emerges (or 'arises') from activity; it is "actively produced, maintained and enacted in the course of the activity at hand" (2004). This thesis presupposes this to be true, that disciplinary activity in the humanities in South Korea generates the context in which the activity takes place and that this activity is governed, in some part, by community practice. This thesis presupposes that mobile learning in the humanities is an interactional rather than a representational issue.

Pragmatically, Dourish's position of interactional context is highly instructive for this thesis in that provides a means for evidencing movement enacted through mobile technology. This evidencing is through interaction: graduate students perform activities through mobile technology, the materials of that interaction are visible and residual, and methodologically there is evidence as a result of that interaction and material. Mobile learning, when positioned as such, becomes an interactional state, one that does not happen *to* a learner, but rather emerges as a result of a learner interacting *with* an evolving context.

While avoiding the technological determinism so present in earlier definitions of mobile learning, research cannot eschew the technology altogether. It remains integral to this process of coming to know in many ways: it not only evidences activity, but actively structures it. It not only permits the use of media; it foregrounds specific material. It not only captures existing practices, it fosters the creation or evolution of new ones. Mobile technology is not an empty vessel, but rather an aggregation of code, practices, and material, all with potential for shaping community practice. As such, this research requires a position of mobile learning that accounts for the effect that mobile technology has on shaping community practice, one that stops short of determinism.

Tolmie (2001) affirms this notion that technology inherently affects context and that effect in turn affects other disciplinary activities taking place, an interactional cycle or evolution of coming to know. This, as Tolmie points out, has considerable relevance to studies of technology use in higher education especially at the postgraduate level. Postgraduate students are generally farther along the continuum of independent learning and, as such, have greater freedom in choosing which technologies to use to advance their learning and how to embed these technologies into their disciplinary processes of meaning-making (2001). This freedom in turn would presumably create significant variability, as Tolmie suggests in the following:

> "Rather than simply seeing such effects as "noise" to be controlled, though, it is important to recognise that they may serve to enrich the impact of the technology, and provide opportunities to be capitalised upon. The reason for this is that it is possible for a resource to be successful in unexpected ways because the context in which it is put allows students to squeeze more out of the experience than anticipated" (p.6).

This variability should not be equated with unpredictability, however. The limitations of this approach are the scope of inquiry: the context of higher education is the bounded space in which this discussion of context is advanced in Tolmie. If the scope of inquiry were expanded to include the informal space and how that space complements and structures engagement in the formal space, then variability isn't noise, not something to be stabilized or removed. 'Noise' is instructive for this thesis; it helps establish the range and variability of activity taking place, and subsequently as this author believes, the range of activity that research design focused on mobile learning should encompass. Wali et al. (2008) advance this contextual focus on learning practices, but exclude communicative

interactions with peers and technology (as an attempt to differentiate mobile from static learning); this exclusion was not incorporated into this thesis as socialized interaction was deemed critical to understanding the full range of activity that shaped disciplinary participation. This broader definition of context also allows this research to identify the adapted practices affecting the learning or participation taking place in the humanities in South Korea, practices that, as positioned in this thesis, help define mobile learning itself.

3.2: Defining Mobile Learning

Defining mobile learning might not be seen as a theoretical exercise, but this thesis is employing it as such. Earlier definitions of mobile learning were generally technologically oriented or deterministic (Kukulska-Hulme et al., 2005), or positioned mobile learning as an extension of e-learning (Quinn, 2000 & Traxler, 2005). These proved insufficient for the evolving context and practices of mobile learning as they emphasized the technology or the location and not the fluid social practices emerging from these contexts (Roschelle, 2003). A more useful definition of mobile learning for this thesis is presented by Sharples, Taylor, & Vavoula (2007); in this definition, mobile learning is positioned as "the private and public processes of coming to know through exploration and conversation across multiple contexts, amongst people and interactive technologies." Although an important progression forward in terms of defining mobile learning, the position of the mobile technology itself in this process "amongst…interactive technologies" suggests a less profound, more passive role that the technology has in shaping the interactional context than this thesis presupposes. Yet it does offer value as it introduces a core field of movement that this thesis attempts to capture: the individualized. While foregrounding social interaction and socialized practice ("amongst people"), this definition acknowledges the private practices of coming to know in a particular context. Further, it suggests movement between these, a

point of departure from earlier definitions of mobile learning in their emphasis on temporal or spatial positions. Here there is a much needed broadening of context to include the private (individualized) along with the socialized. This is a critical departure as not only does it introduce the individualized, it foregrounds the movement between these fields.

It is this movement through multiple contexts that the mobility of mobile learning emerges. As Sharples, Taylor, & Vavoula (2007) suggest:

> "we learn across time, by revisiting knowledge that was gained earlier in a different context, and more broadly, through ideas and strategies gained in early years…we move from topic to topic, managing a range of personal learning projects, rather than following a single curriculum."

In this definition, the mobility in mobile learning can be both material in terms of learning artifacts, and cognitive as it involves knowledge sharing and practice sharing across contexts. Here the second and third traits of a broadening context are presented: the material and the cognitive.

This cognitive mobility is encapsulated in Kress & Pachler's (2007) habitus, an adaptation of Bourdieu's (1977) original position of habitus as the evolving personality structure of the individual, a composite set of schemata, sensibilities, tastes, and dispositions. Habitus is defined by Bourdieu as follows:

> "The structures constitutive of a particular type of environment (e.g. the material conditions of existence characteristic of a class condition) produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles of

> the generation and structuring of practices and representations which can be objectively "regulated" and "regular" without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them and, being all this, collectively orchestrated without being the product of the orchestrating action of a conductor."

This thesis notes the "disposition" being both "durable", "transposable" and "without presupposing a conscious aiming at ends" as it provides a needed parallel to the context described in the previous paragraphs. If context is interactional, if materials and practices are employed by and emerge from this interactional context, then habitus is the precursor to the creation of context. It is the ability, even expectation, of the individual to interact across contexts as *disposition*, rather than as explicitly *purposeful*. Individuals interact because they are disposed to, rather than always in response to pressing need or predefined purpose. Habitus is durable in that it is maintained vigilantly; it is transposable in that it is applied to a variety of contexts routinely. It is iterative in that it shifts in response to activity and feedback received from that activity. An evolved habitus can be seen as an overarching goal of all learning, and in particular mobile learning. It is disposition, or responsiveness to shifting and often unforeseen present or future context, rather than knowledge, or apt understanding of past context and activity. Kress & Pachler (2007) go so far as to suggest that the transformation of habitus is the explicit goal of mobile learning; this thesis argues that a shifting habitus is but one of several goals of mobile learning. Yet, it is positioned here as of critical importance to the definition of mobile learning as advanced in this thesis: habitus is disposition to act in a particular way in a particular community or environment beyond merely responding to a particular

task or activity; it provides a means of evidencing learning within formal and informal spaces, across individualized and socialized ones. This thesis adapts Bourdieu's habitus for several reasons, none more important than the fact that it provides a contextual bridge from the informal to the formal in terms of community participation. It is the complement to the contextual.

This evidence of transformation, of shifting habitus, is made most visible through practices and the materials that these practices employ as discussed by Bourdieu himself. These are not mere responses to explicit directives or instructions; they both reproduce and co-create the contexts in which they are applied:

> "Even when they appear as the realization of the explicit, and explicitly stated, purposes of a project or plan, the practices produced by the habitus, as the strategy-generating principle enabling agents to cope with unforeseen and ever-changing situations, are only apparently determined by the future. If they seem determined by anticipation of their own consequences, there by encouraging the finalist illusion, the fact is that, always tending to reproduce the objective structures of which they are the product, they are determined by the past conditions which have produced the principle of their production, that is, by the actual outcome of identical or interchangeable past practices, which coincides with their own outcome to the extent (and only to the extent) that the objective structures of which they are the product are prolonged in the structures within which they function" (1977).

Practices, as such, are reproducing the in which they are being enacted and responding to the opportunity provided by the context itself. By way of example, the length of time necessary to complete a thesis reproduces the context and

community from which it emerged and provides opportunity to shape it through the production of original research (Nash, 2009, p. 11). Beyond reproducing and realizing opportunity, practices also provides a means of evidencing a shifting habitus.

Kress & Pachler (2007) have adapted it for mobile learning; this adaptation is useful in that employs mobile technology as an agent in evidencing the transformation of habitus itself. Habitus as defined by Kress & Pachler refers to the "the life world of the individual framed both as challenge and as an environment and a potential resource for learning" (2007). While decidedly vague, this linkage of habitus with mobile learning represents an evolution. Clear connections between previously disparate fields or activities begin to appear: disposition, formal and informal communities, practices, technology use, and mobility itself as a cognitive rather than physical or material mobility. In other words, "that which is mobile is not knowledge or information, but the learner's habitus" (2007). This thesis qualifies this statement by stating that which is mobile is not *exclusively* information or knowledge, but also the learner's habitus: the learner's context, practices, dispositions, and modes of engagement, technologically or otherwise shift in concert with knowledge and information. Kress & Pachler would argue that habitus is being transformed constantly and therefore has left the learner:

> "constantly mobile, which does not refer, necessarily, to a physical mobility at all but to a constant expectancy, a state of contingency, of incompletion, of moving toward completion, of waiting to be met and 'made full'. The answer to 'who is mobile?' is therefore everyone who inhabits the new habitus" (2007).

Mobile learning, when positioned as a learning state of expectation, contingency, and approaching but never fully completing (what Collier & Ross, 2016 might refer to as "not-yetness"), is useful for exploring cognitive movements through context. This positions mobile technology as a co-creator that both evidences and structures the larger process of coming to know (returning to Saljo, 1999) across multiple interactional contexts (Dourish, 2004 & Tolmie, 2001). It provides a foundation from which to observe engagement and interaction.

Without this broader definition of mobile learning, it would be difficult for this thesis to establish how meaning is made in the humanities in South Korea across the shifting contexts being partly structured by mobile technology, disciplinary activity, movement between formal and informal spaces, and individualized and socialized interaction. This thesis works under the assumption that the mobility in mobile learning is a cognitive and material state of being, and hence the inclusion of habitus was necessary to establish this cognitive element. Habitus is employed as an expression, even product, of the cognitive, with context as the expression of the material and spatial. They complement one another and, more importantly, provide this thesis with a means of tracking changes in both. Without habitus, the definition of mobile learning is reduced to monitoring shifts in practice and context, without speaking to the cognitive. This is the critical piece that is missing in much mobile learning research, one that builds on the positions put forth by Sharples, Taylor, & Vavoula (2007) and Kress & Pachler (2007) and attempts to provide a means of evidencing both cognitive and material transformation.

Yet habitus has received significant criticism, particularly as it is often perceived to be deterministic and objectivist (King, 2000). Beyond being a trait that this thesis is attempting to avoid and to which much mobile learning research is subject, determinism refers to the critique that habitus provides disposition in

relation to fields without agency, suggesting the lack of capacity to shift or enact significant transformation within a habitus by either the individual or the field (Butler & Shusterman, 1999). This determinist critique, this author believes, fails to grasp the utility of habitus in balancing the power of the individual and the field in shaping activity, as Bourdieu & Wacquant (1992, p. 97) suggest:

> "… A habitus is neither compelled by the field (as in structuralism), nor freely chosen by actors (as in rational choice theories or phenomenology). Thus, habitus is the hinge between objectivist and subjectivist accounts of human action, and helps to explain the intransigence of social change."

It is in this balancing between individual and structural forces that habitus provides utility for the position of mobile learning. It provides a definition that accounts for *disposition*, the reaction to and manipulation of context structured by both the field and the individual, to counter the *deliberation* of constructivism, or the execution of deliberate activity for learning. Rather than position either as deterministic, habitus merely reinforces the assumption that both exert control over activity in varying measures; the "intransigence of social change" doesn't negate the potential for individual transformation within a field or community.

Further, habitus provides us with a concept that evidences transformation: practice. As "habitus is generative of practice, so creative change can occur as the ever-shifting conditions of the field enable different interactions" (Bourdieu & Wacquant 1992). These conditions underpin much of this thesis: the endless permutations of context structured by mobile technology, the crisis of employability amongst the humanities in South Korea forcing curricular redesigns, and so forth. All these conditions force iterations on both community and individual practice and, in the application of these iterated practices, evolve the

community itself. This evolution needn't be profound; this thesis is pursuing a definition that allows for the evidencing of slight, or granular changes in both community and individual activity. Habitus provides a concept that allows for the evidencing of these granular changes by avoiding a focus exclusively on community or individual activity; it suggests both structure activity.

As repurposed for the definition of mobile learning advanced in this thesis, habitus provides a means of balancing the competing pulls on these graduate students away from a deterministic focus: solely the community, the individual, the formal, the informal, the technological, the social, and so forth. It acknowledges that the individual and the field are working in tandem. Habitus provides practical utility as well as it provides antecedents to practices precisely because it is "generative of practice." As a generative concept, it produces the evidence required to begin to chart trajectory. Habitus is linked to practice and evidence this through mobile technology; without habitus, the definition of mobile learning is reduced to constructivism and fails to account for disposition as these graduate students navigate shifting contexts being partly structured through mobile technology.

3.3: A Working Definition of Mobile Learning

As such, this thesis proceeds with the following definition of mobile learning that attempts to coalesce these points into coherency. This represent a departure from positions of mobile learning that emphasize a temporal or technological focus, those that emphasize reception to the technology, an output orientation (e.g., assessment), or even the potential for unmooring space itself. This definition suggests that the complex mobility being evidenced in mobile learning is not exclusively material; subtle shifts in habitus, in the practices generated therein, in the contexts in which these practices are enacted, and so forth indicate a mobility

that has gone largely unnoticed in the research literature. This definition of mobile learning looks to begin to address that gap.

As such, mobile learning as defined in this thesis will be characterized by the following:

- It represents contextual and technological mobility in that it occurs across multiple interactional contexts (Dourish, 2004), amongst people and interactive technologies (Sharples, Taylor, & Vavoula, 2007).
- It represents a categorical mobility in that it demonstrates learning that encapsulates public and private practices (2007); activity will flux between individualized and socialized states of activity with movements across informal and formal contexts (Park, 2011).
- It represents both a cognitive and material mobility in that learning is mobile in both material and cognitive form; mobile technology evidences learning through practices and materials while the transformation of habitus being evidenced makes visible cognitive mobility (Kress & Pachler, 2007).
- It represents a spatial mobility in that learners "artfully engage with their surroundings to create impromptu sites of learning" (Sharples, Taylor, & Vavoula, 2007); these "impromptu sites of learning" may evidence shifts in habitus, but they also suggest a need for a repurposed definition of the space being transversed by these graduate students.

Put succinctly, the definition of mobile learning as advanced in this thesis is as follows: Learning that occurs across technologies and interactional contexts that presents evidence of categorical, cognitive, material, and spatial mobility.

This working definition allows for the inclusion of shifting interactional contexts, practices to engage these contexts across a range of fields, evidence of material and cognitive transformation, and evidence of innovative engagement with space and material. It proves utilitarian in that it allows us to begin to make use of the evidence emerging from mobile learning itself: the residue of community engagement on discussion boards or social media, the practices emerging from the media being generated, the subtle shifts in disposition around disseminating and sharing the results of these efforts, and the observations of community iteration as a result of this activity. All are brought together.

This definition also foregrounds alternative mobilities. It places greater emphasis on learning to suggest transformation or movement, and less emphasis on learning with a particular technology, at a particular time, and place. It concurs with Kakihara & Sorensen's (2002) argument that the mobility engendered in mobile learning should not be linked exclusively to spatial and temporal dimensions, but rather encompass the contextual as well. With such a definition, affordance (what mobile learning *can* do) shifts to transformation (what mobile learning *is* doing). It is directly inspired by "rejections of sedentarist assumptions" (Urry, 2007) and the overall "mobilities turn" in the social sciences (Sheller & Urry, 2006). It applies this mobilities turn in a specific environment mediated by mobile technology.

Yet, this definition proves challenging in its theorization and analysis. As it is incorporated for the multiple mobilities of the categorical, the cognitive, the material, and the spatial, this definition must be linked to a theoretical framework that surfaces these mobilities and suggests their relationship with and throughout the communities they are being engaged in, and couple that with a methodology

that makes visible the material of that mobility and community interaction. Yet, this definition is the foundation from which the remainder of this thesis is built.

3.4: Theoretical Need

Building on this adapted definition of mobile learning, this chapter presents a framework that attempts to theorize it with rigor. As such, the theoretical framework presented in this chapter addresses the needs as discussed in the following sections. These needs (presented in italics below) represent the beginning of the research questions advanced in this thesis.

Identify the characteristics of the artifacts being evidenced through mobile activity

This need exists as a transcriptional need in that it attempts to identify the significant characteristics of the media, technology, and activity that these graduate students employ to make. These artifacts are employed as their definition suggests: "words, tools, concepts, methods, stories, documents, links to resources, and other forms of reification—that reflect our shared experience and around which we organize our participation" (Wenger, 1998). While the emphasis in this thesis is less on "shared experience", but rather practice sharing and learning trajectory as opposed to full community participation, it is still necessary to incorporate the communication itself, along with the tools, concepts and practices.

Identify the characteristics of mobile activity as it relates to learning and disciplinary participation

Learning can span the informal, formal, socialized and individualized fields (Park, 2011). This thesis positions sequences of activities revolving around the manipulation of these artifacts in the social world as practices allowing for shifts in habitus. These shifts in habitus are considered learning for the purposes of this

thesis and, as stated, span the informal, formal, socialized, and individualized fields.

Indeed, the term *field* itself is adapted from Bourdieu's (1977) positioning as the social spaces emerging from the differentiation of social activity. While Bourdieu's positioning of field as discrete social space is instructive, it is insufficient in theorizing the activities being observed in this thesis as it implicitly excludes individualized space, which this thesis presupposes informs the practices of socialized, informal, and formal space. A theoretical position is needed, therefore, that spans discrete spaces and illustrates the manner in which participation or learning in particular fields or communities are readily shared and adapted for participation or learning in *other* fields and communities.

Provide theoretical structure for equating activity to trajectory

This is a critical distinction that this thesis is attempting to illustrate. The data being collected for this thesis is designed to identify discrete activity related to learning and community participation. These discrete activities can be positioned amidst the context from which they emerged (informal, socialized, informal, and formal), but a theoretical framework must identify if and how these activities aggregate into a trajectory, or an orchestration of activity in relation to a community. Trajectory is evidenced in this thesis across several modes and methods, congealed through a narrative design discussed in reference to Bruner (1991). In short, this thesis attempts to take activity and aggregate that activity into trajectory through the structuring devices of narrative.

This thesis most readily employs adapted versions of the theories of community of practice, and learning trajectories (Wenger, 1998) as the primary thrust of theoretical activity and as such are foregrounded here in these methods of

selection. These theories are employed to form a critical framework for understanding both informal and formal communities and the role of mobile technology in managing participation across these communities. Community of practice theory was chosen as the primary theory through which community activity in the humanities would be analyzed as it presents a compelling, if contested, articulation of community through boundaries, practices, and memberships. Learning trajectories, while establishing the structure of the communities in which these graduate students participate and in which they hope to participate, charts the movement of these students across communities. What follows is a brief overview of community of practice theory and a discussion of the specific attributes are being applied in this thesis.

3.5: Community of Practice

Lave & Wenger advanced the theory of the community of practice (1991), defined (Wenger, 2015) as "communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor." More specifically, "a community of practice is a set of relations among persons, activity, and the world, over time and in relation with other tangential and overlapping communities of practice" (Lave & Wenger, 1991, p. 98). Community of practice theory defines communities of practice through the variables of domain, community, and practice. Domain refers to a shared domain of interest common to all the participants in the community. Participation in the community involves a certain allegiance to the domain and an interest in learning to navigate it. Community in this context refers to both the participants and the processes they employ to interact and learn together.

Graduate students signal evidence of the "newcomers move from being peripheral to full participation in the community" (Hildreth, Kimble & Wright, 2000) through

the employ of formalized practices, just as they signal an outbound or boundary movement when they subvert or ignore their use. These moves from periphery to center represent an organizational dynamic of a community of practice. Community of practice theory structurally presupposes if not the inevitability then certainly the desirability of a centering movement towards the community, an implicit inbound trajectory (Wenger, 1998). This thesis challenges this assumption, but acknowledges the utility of community of practice theory in demonstrating the pull, or gravity, exerted on the individual by the communities of which they are a member or desire to be a member. As much of this thesis is related to movement and trajectory, this ability to foreground this gravity proves theoretical useful in foregrounding the movement as well.

This movement is further theorized through practice. Community in this instance feeds directly into practice, namely that members of the humanities community are practitioners. There is a 'shared repertoire' of processes towards professional and academic interaction (Wenger, 1998). Many of these practices are linked directly to knowledge production and verification, many are designed for identity development, many are related to technological and media production, and many are designed around informal socialization. They are generated within the community and persistently negotiated. "Correct" practice in this instance refers to the ability of the individual practitioner to understand, employ, and evaluate these processes towards community and individual goals. It is the intersection of these variables; domain, community, and practice, along with this presupposed migration from peripheries to participation and practice that reveals the community structure of the humanities.

An additional characteristic of a community of practice is on learning as a social process, or as "an integral part of generative social practice in the lived-in world"

(Lave & Wenger, 1991). Social processes influence the development of community participation, participant identity, and the shared repertoire of processes that comprise practice in the community. It is through social interaction that participants learn what constitutes practice in the community, whether as appropriate modes of knowledge representation, appropriate modes of engaging with technology, or even the accepted language of communication and formal discourse. This 'generative social practice' is a social learning system. A social learning system, as defined by Wenger, is 'a system of activity, in this case bound within a community of practice, that involves the characteristics of competence and experience of its members to perform community activities" (2000). What this thesis presupposes, however, is that the performance of these community activities often results from adaptations of practices emerging from outside the formal community.

Community as defined in this thesis involves participation in a disciplinary community either through direct formal engagement with the shared domain, or shared repertoire of processes that the discipline adheres to, or participation in the development of learning processes in informal communities that provide resilience or support for participating in these formal communities. In short, community is defined through participation in a shared exercise, whether that participation involves formal activity or informal support or learning for performing that formal activity. This positioning is a strategic as much as a theoretical distinction. While great efforts are made in this thesis to expand the scope of observable activity to both the informal and formal fields (as well as socialized and individualized) in an attempt to provide a broader landscape of practice evidenced through mobile technology, the focus remains on how this activity across such a social topology ultimately informs disciplinary participation.

As it stands, the humanities remain the focus and, as such, the informal is positioned as a structuring agent for the formal.

3.6: Limitations of Community of Practice

Despite the advantages posed by its use in structuring this thesis, community of practice theory has been widely criticized. These criticisms generally involve the limitations of the theory when applied to newcomers, and the difficulties encountered in their transitions to full members. These difficulties are exacerbated by the tacit aspects of community practice; learning practices is not explicit but lays hidden in the modeling of behavior from full members of the community. “Thus learning in the sense of becoming a practitioner—which includes acquiring not only codebooks but the ability to decode them appropriately--can usefully be thought of as learning to be” (Duguid, 2005). Further, the tacit dimensions of community practice are not all bound in its members: it may be distributed across the collective and their shared artifacts rather than held by individual members (2005). Such ambiguity in terms of practice, when applied to organizational contexts and transitions from peripheral to full members, has created tension with the application of the theory.

One such transition is related to academic communities. As a largely tacit prerequisite for a community of practice, a shared repertoire is also “problematic when applied to academic literacy practices, which are recognized to be plural, contested, unstable and largely tacit” (Gourlay, 2009). The graduate students participating in this study would, presumably, be subject to learning or adapting practices that are largely tacit, practices bound in both community members and artifacts. Yet this tacitness and plurality of community practice as applied to this humanities context isn’t an inherent limitation of community of practice theory. Rather it is a core feature of the humanities, where knowledge is pursued and

produced as highly contextual and relational (Atwill, 1998). Each interaction produces knowledge; knowledge then creates further subjectivities and opportunities for analysis; plurality and tacitness are embedded in this process.

This has been addressed in several studies and all have surfaced limitations in transitioning the newcomer into full member status in the academic community. Lea (2005) has noted that due to the characteristics of a community of practice as a shared enterprise, shared domain, a shared repertoire of processes, and mutual engagement in the maintenance of the community, many academic communities fail to qualify as the work of faculty and students aren't 'shared', due to the gatekeeping function of assessment, which positions students as 'permanent novices' (2005, 193) in relation to the community of experts. These limitations, particularly as they relate to this thesis, are applicable in that they affect the peripheral participants being investigated. However, gatekeeping through assessment does not prove to be an overt theoretical liability to this research as it does not or is presumed to not thwart a trajectory in relation to a community; if presented as an impediment in the data, then this will prove instructive in the analysis as a factor that influences the shape of that trajectory.

Yet, these gatekeeping practices of assessment are examples of larger power structures in communities of practice, which are inherent to the theory:

> "the operation of power to foster or impede access to, and continuing membership of, communities of practice—distilled in the phrase, "legitimate peripheral participation." This notion highlights the power-invested process of bestowing a degree of legitimacy upon novices as a normal condition of participation in learning processes. It is clearly difficult, if not impossible, to learn a practice, and thereby to become an (identified) member of a

> community of practice, when power relations impede or deny access to its more accomplished exponents" (Contu & Wilmott, 2003).

These power relationships may serve to impede or completely inhibit full membership in the community if access is denied to "its more accomplished exponents." Power, as such, is manifest in the capacity to administer legitimacy on the work of peripheral participants, work that is often the result of navigating and operationalizing a series of tacit practices. Legitimate peripheral participation (Lave & Wenger, 1991) manifests this process as legitimacy and is defined by full community members. Academically, this might involve the ambiguity and subjectivity of particular grading rubrics, the availability of faculty for mentoring and consultation, the doling out of employment through research assistant positions, and so forth. While certainly a limitation to membership in the community itself, community of practice theory remains applicable in that it does not assume fluid paths to full community membership; it merely illustrates how they might work. By illustrating these paths to full community membership, community of practice theory provides a means of evidencing where obstructions occur, where power relations are actively negating peripheral participation, and how legitimacy is being conferred or not.

Further limitations include the notion that community of practice theory is "in its use as a performative rather than analytical tool" (Gourlay, 2009), a point reiterated and lamented in Contu & Willmott (2003), Duguid (2008) and Lave (2008). This is not a result of the limitations of the theory itself, but rather in its use as a tool to stimulate performance or indeed even stimulate the creation of communities of practice. This focus on performativity negates the analytical potential of the theory, which seeks to address many of the tacit dimensions of community practice and learning. The tacitness, ambiguity, and ultimately organic

aspects of community practice are being rendered and ultimately reduced in much of the literature as extensions of configuration and instrumentalization: that the complexities of community practice can be engineered in such a way to "produce" or stimulate communities of practice. Such a position is a distortion of the original position of community of practice theory: "although communities of practice are fundamentally informal and self-organizing, they benefit from cultivation" (Wenger & Snyder, 2000). Cultivation is often operationalized as "harnessing" or exploiting the "potential for creativity and innovation offered by CoPs...the intangible, the tacit, and the practiced (Amin and Roberts, 2008). This shift from analysis to performance is evident and serves in large part to mitigate the analytical potential of community of practice theory.

While the research presented in this thesis sidesteps many of these issues by focusing on trajectories in relation to a community rather than membership in said community, it acknowledges the theoretical limitations presented here. What this thesis advances in relation to community of practice theory is that communities of practice are correlated to student activity. They exert a gravity that may or may not lead to legitimacy or full membership, but a gravity nonetheless. In the adoption and adaptation of these tacit practices, this research sees or hopes to see transformation that results in a trajectory in relation to that community. In the South Korean context, this process is assumed to be made "manageable" through the very specific sociocultural practices, themselves largely tacit, that structure community participation. Yet first the theoretical opportunities and limitations afforded by learning trajectories needs to be established.

3.7: Learning Trajectories

To evidence the broader focus on "context, process, social interaction, material practices, ambiguity, disagreement", this research turns to learning trajectories.

While much of community of practice theory focuses on movement *within* a community, this thesis finds it instructive for signaling movement *across* communities. These trajectories suggest that people do not just appear within these communities as full-fledged members, but rather begin on the outside and slowly progress towards the center, if at all. The term trajectory, however, suggests a 'fixed course' or even a predictable outcome or destination. It suggests a problematic assertion: that participants are either centering (inbound), de-centering (outbound) or maintaining a peripheral movement (boundary). This assertion is challenged by this thesis and by Wenger himself in the following:

> "the term trajectory suggests not a path that can be foreseen or charted but a continuous motion – one that has a momentum of its own in addition to a field of influences. It has a coherence through time that connects the past, the present, and the future" (Wenger, 2010, p.134).

In this positioning and in this research, trajectory is positioned as an aggregation of activity, mediation (technology or otherwise), practice (disciplinary, socialized, or otherwise), and other fields of influence, that presents narratives of community participation. Wenger (1998) outlines five trajectories (summarized in Oliver & Carr, 2009), all of which are useful in establishing the range of activity that will be included in this thesis:

> "peripheral trajectories (which provide community access but never lead to full membership), inbound trajectories (which move from peripheral participation to identification with the community), insider trajectories (the ongoing renegotiation of identity within a community), boundary trajectories (involving participation in more than one community, which may lead to links being established or practices shared) and outbound

trajectories (which involve leaving one identity behind in order to take up another)."

Particular trajectories are focused on in this thesis, namely inbound trajectories, outbound trajectories, and boundary trajectories as they broaden the scope of participation to include informal learning processes that directly or indirectly prepare students for disciplinary participation. These trajectories reveal the participatory processes of the graduate students involved in this study. In short, the community as defined by community of practice theory includes legitimate peripheral participants and their learning engagements along the boundaries of the disciplinary community. Trajectories provide a mechanism for making visible the movements of the graduate students involved in this study across formal and informal spaces and mediated through mobile technology. As such, this thesis is quite concerned with three specific trajectories.

The first, inbound trajectories, are trajectories from periphery to center, or from peripheral to full membership in the community. This thesis presupposes that the graduate students involved in this study are more likely to evidence movement from periphery to the center of the disciplinary community more readily than the average undergraduate student might. It was assumed that several of these graduate students would reveal an accelerated or more pronounced inbound trajectory as they moved from graduate to doctoral school. Outbound trajectories involve movement out of or away from the community of practice, best evidenced potentially by graduate students that might be withdrawing from the academic community to begin a professional career in other lines of employment.

Peripheral trajectories are defined as providing access to the community but not achieving full membership. Peripheral trajectories were dropped in favor of

boundary trajectories as there was significant evidence of practice-sharing (from informal to formal communities) and multimemberships most notably between professional and academic communities (detailed in Lahn, 2011 in discussing professional learning as epistemic trajectories), both hallmarks of the boundary trajectory. Peripheral trajectories also imply full membership is not achieved, a distinction that cannot be made with graduate students who might someday achieve full membership. Peripheral trajectories, in their focus on the movements in relation to one particular community, neglect the larger field of activity being transversed by these graduate students. As such, the focus of this thesis is inbound, boundary, and outbound trajectories.

As such, this idea of multiple community memberships, which Wenger refers to as multimemberships (1998), is critical to following this movement. These additional communities include social and resiliency building informal communities, as well as the technological communities and media communities involved in mobile technology and the media being produced there. All of these are expected to directly influence participation in the formal disciplinary community of practice and all need to be considered in a broader definition on what constitutes community. This thesis focuses quite extensively on boundary trajectories, how these students are participants, consciously, in more than one community and how they move between them. There is considerable work involved in the "reconciliation necessary to maintain one identity across boundaries" (Wenger, 1998), but this thesis suggests that this isn't the point. The effort involved in reconciliation is mitigated through other layers of remediation, including mobile technology itself. Multiple identities are crafted to fit particular communities and their reconciliation suggests discomfort with identities that are seemingly in conflict. Localizing this study in the South Korean context, where effortful multimemberships are the norm, presents a rich variation on this notion of

reconciliation; grounding this study in mobile technology, where multimemberships can be engaged and managed consistently, further complicates the reconciliation needed to participate in multiple communities. This forms a further strand of inquiry that can be gleaned from this study.

Where this thesis challenges much existing research on community of practice theory is its emphasis on informal practice on shaping formal practice. This thesis argues that the maturity of South Korean mobile activity and practices directly impacts not only the management of multimemberships, but also formal community practice itself. By emphasizing learning trajectories and multimemberships, this thesis also repositions many of the aforementioned critiques of community of practice theory: academic practice as highly textual and "partially hidden", feelings of "confusion, inauthenticity and isolation, and a distinct absence of shared repertoire, mutual endeavour and expert-novice interaction" (Gourlay, 2011); peripheral participants being excluded through unfamiliar academic practices (Lea, 2005), gatekeeping in the form of accreditation and assessment (Gourlay, 2009), among others.

As such, a theoretical shift was deemed necessary away from full disciplinary community membership and its attendant restrictions. This author felt the need to transition away from centrality of a single participatory experience in a single academic community of practice towards the movements and social topologies being evidenced by these students across multimemberships, some of which appropriate practices from one to the other. The focus of this research is not so much as to track community participation from *within*, but to track movement in relation to a community from *without* (a trajectory in relation to a community or communities). Academic communities exert a gravity on these graduate students but do not exert a monopoly on their intent or activity. Multimemberships assist in

orchestrating a trajectory in relation to an academic community, rather than have the academic community solely dictate that trajectory.

A further aspect implicit in communities of practice in regards to its tacit dimensions is liminality, of which this thesis makes use. Liminality is positioned as a state of ambiguity where an individual has yet to achieve a transformation of understanding or "a deeper territory of understanding" (Gourlay, 2009), along with the identity developments that this intellectual transformation implies. It is a state of indeterminacy. Many of the conditions for this liminality, conceptualized in threshold concepts (Meyer & Land, 2005 & 2003), are tacit, as in they are not overtly capable of being articulated, further increasing the ambiguity felt in trying to negotiate boundary or threshold crossings. Once the liminality has been at least partially abated by passing across the threshold as full community members, the individual is characterized by transformative, irreversible, and integrative change (2003). This thesis is less concerned with threshold events, but rather with liminality, which is presumed to be present in all the participating graduate students. The state before the transformation, the liminal state, is according to Meyer & Land (2005), a state "naked of self", an identity neither in one category or another. "In making a transition to a new identity, an individual 'must strip away, or have stripped from them, the old identity" (Stibbe, 2011). This thesis challenges this assertion by supposing that these graduate students will evidence liminality as the norm, and provide little evidence to support feelings of "naked of self", or identity confusion. What this thesis suggests, however, is that the being "naked of self" or manifesting the problematic aspects of liminality are mitigated by South Korean sociocultural practice.

Liminality is a necessary addition to the theoretical framework emerging from this chapter, one needed to counteract and more fully articulate the friction and

generative characteristics existing along the boundaries of peripheral participation. Liminality also assists in theorizing the impact of mobile technology on boundary movements, learning trajectories, and community participation; this is a technology that structures the *possibility*, if not the *probability*, of an almost perpetual liminality, one where multimemberships are managed through South Korean socialized practice, but where not one community is inevitably favored. It is supposed that many graduate students will present a trajectory of of liminality where they exist as peripheral members in several communities, without indicating a particular migration towards one.

As such, liminality, as presented in this thesis exists less as troublesome and humbling and more as a condition of not-yetness, a concept advanced in Collier & Ross (2016 Forthcoming) to describe the condition whereas practices emerging from emerging technologies are "'not yet' fully researched or understood." This is partly due to their position as graduate students, which makes it impossible for them to become full community members of either the academic or professional communities. This is partly due to the mobile technology itself, which allows for the management of multimemberships almost simultaneously.

What this thesis presupposes is that the "instabilities in the social context, the ongoing ambiguity and multiplicity of meanings, the lack of resolution" (Beech, 2010) inherent to liminality and the position of these graduate students *might* not render negatively in terms of a relationship with a particular community. This thesis assumes that aspects of liminality in relation to their multimemberships will present themselves in all these graduate students and that this liminality will inform their trajectory. Liminality forces us as researchers to avoid seeing trajectory as a monolithic direction, but rather as an overall movement in relation to a community, one subject to instances of reversal or regression.

As the summary table suggests, the primary theoretical lens employed by this thesis are the learning trajectories emerging from community of practice theory (Lave & Wenger, 1991). Liminality is presented not so much as a theoretical framing, but rather as an element of a larger overall trajectory; it supplements Wenger's original position of trajectory as described in this chapter.

Theory	**Aspect of theory being applied**	**Thesis Restrictions**	**Assumptions**
Community of practice theory (Lave & Wenger, 1991)	Learning trajectory	Not concerned with full community membership, but rather trajectories *in relation to* communities	Participants will exhibit multiple trajectories simultaneously
Community of practice theory (Lave & Wenger, 1991)	Liminality	Not concerned with threshold crossings and full community membership but movements away and towards communities	Multimemberships are the norm and some will not indicate a centering towards any particular community

Table 3: Learning Trajectories

3.8: Theorizing Space Around Learning Trajectories

All of this suggests a fluid space where multimemberships are managed, where trajectories are evidenced, and where liminality is presupposed to be if not the norm than a consistent variable. As such, a brief discussion of spatial concepts

employed to describe this environment of activity, where trajectories are drawn and redrawn inside or outside community boundaries, is presented.

Wenger-Trayner & Wenger-Trayner (2014) expanded the theoretical scope of community of practice theory towards a larger system or field of activity, referred to as a landscape of practices. This repositioning of activity towards a larger landscape presents tactical advantages but theoretically proves unsatisfying for this thesis. Pragmatically, it broadens the focus away from individual communities of practice and towards "bodies of knowledge", where landscapes involve the aggregation and interactions between different communities of practice. This proves useful for this research as it allows for the realization of the states of activity observed (Park, 2011). It also positions practices in a broader landscape of activity where one never "subsumes" another or is merely implemented in one community or another. All exist in relation to activity and each other; "practices in a landscape inform and influence each other" (ç, 2014, 16).

Yet, this broadening presupposes interaction across communities of practice, which while possible cannot be presupposed in these graduate students. Further, it negates those communities that might not constitute communities of practice lacking distinct boundaries, shared identities as practitioners, or even a shared repertoire of practices, which certainly inform the practices being employed in the more formal communities of practice. As such, landscapes prove unsatisfying in not addressing the role of the informal, socialized, and individualized on formal participation, as this thesis explicitly attempts to do. It proves unsatisfyingly reductionist, particularly as evidenced through mobile technology which structures frequent movements across the informal, formal, individualized, and socialized. As such, landscapes are adapted in this thesis away from Wenger-

Trayner & Wenger-Trayner's- (2014) positioning and towards activity spanning both communities of practice and non-communities of practice.

A further spatial positioning that proves useful in articulating these larger fields, or landscapes, of activity are the social topologies of Bayne et al. (2014). Social topologies are larger sets of shifting relationships spanning interactions and contexts that suggest an emergent social space. Social topologies are concerned with "articulating how patterns of movement and stasis are shifting and changing in relation to each other" (Bayne et al., 2014); they draw on Mol & Law's (1994) delineations of social space as regional (stable boundaries), network (stable relations between elements), fluid (shifting and volatile boundaries and network relations), and fire (complex intersections of presence and absence). These four types of social space are not adopted wholesale for this thesis, particularly in that fire spaces are believed to be less evident in the South Korean context. More importantly, however, is that these social spaces are intertwined in "intricate relations" (Mol & Law 1994, p. 662) with one another, and binaries regarding the hierarchical positioning of one space over the other are ultimately reductionist. This thesis is more concerned with how these social spaces (and the communities that emerge from them) intersect and appropriate each other (Mol & Law, 1994, p. 663).

As such, social topologies are useful in presenting landscapes and communities of practices not as monolithic entities with clear delineations, but rather as sets of relationships that shift in response to boundary interaction. As such, this allows for a theoretical consideration of how the informal informs the formal through interaction amidst a social topology, as opposed to delineated landscapes of interaction amidst communities of practice. As the overall composite of these spaces and activity, social topologies establish an environment in which the

positions of mobile learning discussed in this chapter are enacted; the interactional context of Dourish (2004) and the habitus transformation of Kress & Pachler (2007) are both evidenced from within this social topology.

The following illustration (Figure 1) illustrates this social topology: sets of relationships are formed and iterated on through interactions (the orange clusters of individuals) around objects and artifacts (represented by, but not exclusive to, the media icons), structured by mobile technology (the green frame evidencing this structuring), suggesting larger movements of activity (the blue arrows) that might be assembled into trajectories. A strict adherence to community of practice theory might limit this larger spatial structure from being evidenced. If full community membership is not an inevitable outcome for participation, then learning trajectories are foregrounded as they prove useful in theorizing the movements along the boundaries of multimemberships, and through the social topologies of these students.

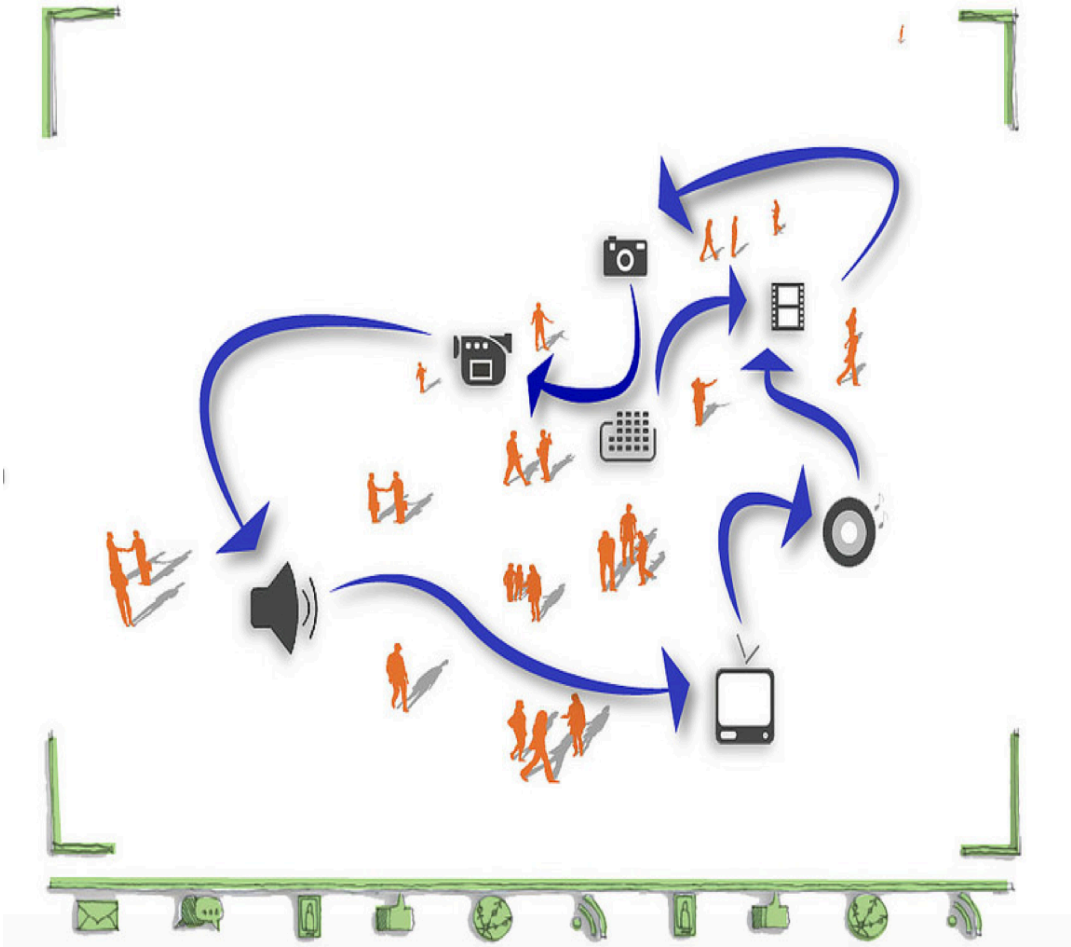


Figure 1: Social Topologies

Conceptually, learning trajectories act as a laminate aggregating activity into a larger movement suggested by the “intricate relations”, intersections, and appropriations of social space (Mol & Law, 1994). It allows for a loose structure to emerge around the activity. The mobile technology plays more than a perfunctory role in this process of lamination. It evidences much of what constitutes the trajectory itself: the social spaces, the movements between the informal, formal, socialized, and individualized, the materials, and so forth. The mobile technology is an agent in evidencing, structuring and managing participation in this activity, while being transformed by what it has evidenced.

This positioning of learning trajectories as a series of laminates is illustrated in Figure 1. There are four layers of activity being foregrounded in this thesis, which are aggregated into one laminate above. Taken individually as in Figure 2, moving clockwise from the upper left, activity is presented across the informal, formal, individualized, and socialized which constitute the social topologies as discussed. These are iterative sets of "intricate relations" (Mol & Law, 1994) evidenced through interaction with boundary objects (the second image in the upper right). These boundary objects are not limited to media or the media practices used to create them, but include discourses, technological practices, and other artifacts engaged with to generate meaning at the boundaries, or intersections of community activity. The third image illustrates the movements suggested by these activities and interaction with materials, while the fourth image demonstrates the mobile technology laminate that structures and evidences these other layers. These visualizations provide links from the theory and the methodology provided in Chapter 5; when assembled, they illustrate both the social topology and the learning trajectories being evidenced by these graduate students.

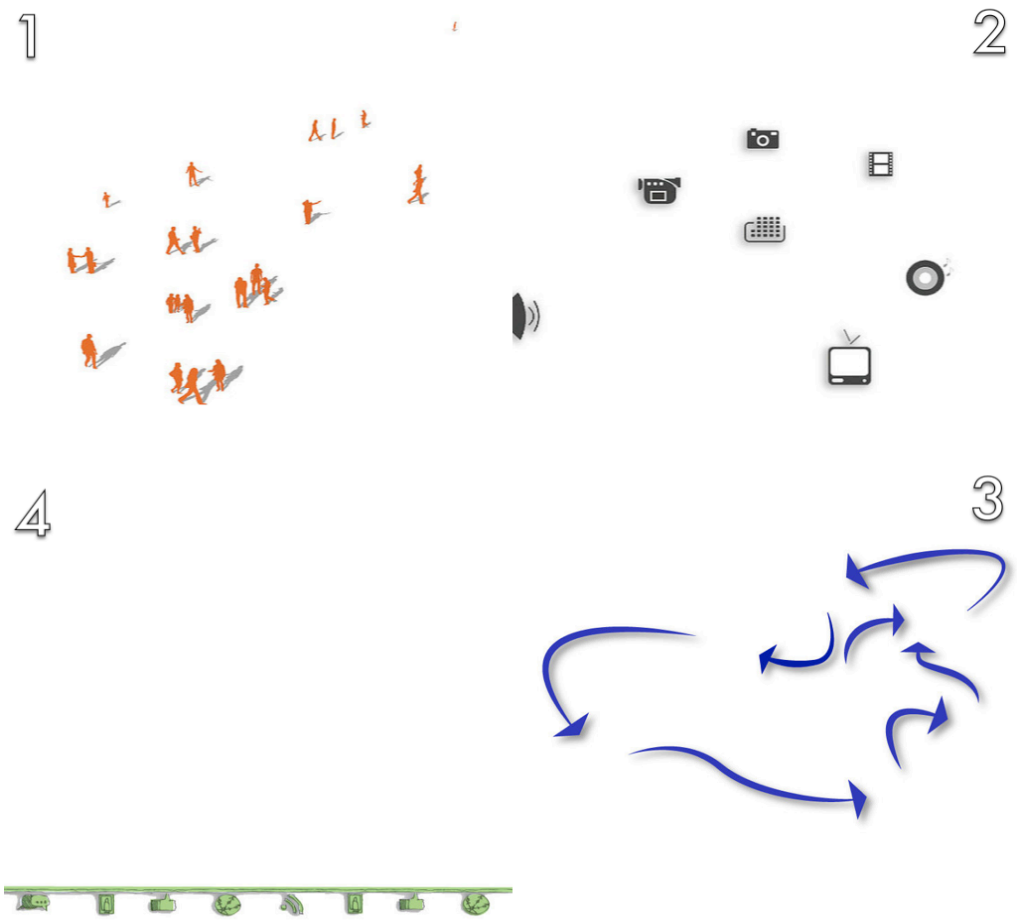


Figure 2: Laminates, or layers of activity

3.9: Learning Trajectories and Emerging Research Questions

This thesis focused on select trajectories (inbound, outbound, and boundary) as a result of the limitations imposed upon these graduate students. Yet this thesis presupposes that these limitations are balanced amidst the interaction of multimemberships and the structuring elements of South Korean sociocultural practice, and managed to some degree through mobile technology.

The research questions emerged partially as a result of this focus on a broader environment of activity and on specific trajectories. The research questions, and indeed the entire research design, do not presuppose the centrality of the disciplinary community of practice in the activities of these students, but rather

look to determine how movement might suggest a trajectory in relation to the disciplinary community *within* an overall social topology. These research questions address the gaps in the literature by identifying a fuller range of practices and fields than have been used in past research, and to center this address amidst the nexus of multimemberships rather than at the peripheries of community practice where the bestowing of legitimacy negates the rich movements being evidenced by these graduate students through mobile technology.

These research questions must also operationalize the mobile learning definition advanced in this thesis by determining how mobile technology both evidences and structures this activity. Ultimately, this research is designed to do both: validate the mobile learning definition being presented here, one that emphasizes transformation and a several mobilities, as well as determine the validity of the use of learning trajectories as a theoretical model for determining the nature of the relationship of the graduate student with their disciplinary community.

To provide a holistic environment in which to address these research imperatives and to address the gaps in the literature, it is critical to develop research questions that position the graduate student amidst their own nexus of multimemberships, acknowledging the competing and conflictual pulls of the range of communities in which these students participate; and to do so across the range of fields in which these activities are engaged: the formal, the informal, the socialized, and the individualized. This research is designed with the express belief that such a broad scope of activity will provide ample space to evidence a trajectory.

As such, research questions emerging from this discussion are developed to determine pragmatically how mobile technology is being used to support

community participation and learning, what practices are evidenced as a result, what artifacts are being produced in this interactional context, and whether this can then be illustrated to suggest a trajectory in relation to the disciplinary community. It is believed that these research questions will begin to address the gaps in the literature across a variety of research fields: mobile learning, community of practice theory, learning trajectories, liminality, habitus, and so forth. Based on this, the research questions that this thesis intends to address are as follows:

1. How do graduate students in the humanities in South Korea use mobile technology to support their learning practices?
2. What learning practices are presented in this mobile technology use?
3. What mobile artifacts are being produced in mobile technology in the humanities?
4. Does this combination of mobile technology use, artifacts, and learning practice suggest a learner trajectory in respect to the disciplinary community?
    a. If so, what shape does that trajectory take?

These research questions, particularly- *how do graduate students in the humanities in South Korea use mobile technology to support their learning practices?*- do not specify if these learning practices emerge from formal, informal, socialized, or individualized spaces. They are situated within a social topology of practices that shift as relationships and knowledge are iterated upon. These shifts are the movements discussed in this chapter, movements which may then suggest a trajectory in relation to a *particular*, but not *exclusive*, community or set of communities.

The theory presented here specifically accounts for the third research question- *does this combination of mobile technology use, mobile artifacts, and learning practice suggest a learning trajectory in respect to the disciplinary community?*- by providing a structure for identifying and analyzing movement within a context: a social topology containing a nexus of multimemberships, a series of interactional contexts, and movements therein.

This thesis now turns to how the particular South Korean sociocultural context in which this theory and these research questions are being applied: a context with a dynamic history of mobile technology use, of an academic structure in tension, and specific Korean sociocultural practices that directly influence the nature of the social topologies being evidenced in this thesis.

Chapter 4: The South Korean Context

This chapter provides the South Korean landscape from where the analysis contained in this thesis emerges. This chapter begins by providing an introduction to the mobile learning model employed in South Korea, namely a government-led, top-down model of ICT and mobile technology enhanced education. This precedes a review of the long and sophisticated use of mobile technology and social media in the informal space, use that directly affects the nature and structure of formal disciplinary participation current state of mobile technology use in South Korea. This discussion is followed by a discussion of mobile technology use in formal education. This is followed by an introduction to mobile technology use in higher education in South Korea and within the humanities, specifically. The aim of this chapter is to provide an overview of the state of mobile technology use in higher education in South Korea, and, more specifically, within the humanities in the universities of South Korea.

4.1: Current State of Mobile Technology use in South Korea

As discussed briefly in Chapter 1, South Korea is at the forefront of mobile technology use; it is both a leading producer and consumer of mobile technology. The effects of this broadband access and mobile technology use has been felt in many aspects of South Korean society, from education to politics (Kim, Moon & Yang, 2004). For education, this saturation of broadband access, ICT, and mobile technology has produced an environment where educational policies and programs developed around this technology are part of a larger interrelated whole. This is made evident through the use of often interchangeable terms used to describe what are often considered discrete aspects of technology enhanced learning. These terms include eLearning, mobile learning, uLearning (ubiquitous learning), and smart learning. All of these, in some measure, incorporate both

mobile technology and other forms of technology. All of these, in some measure, encapsulate the environment and culture of seemingly unlimited internet access and technological ownership that most South Koreans enjoy. Further, and perhaps most important to this chapter, all of these terms directly affect the use of mobile technology for learning in higher education in South Korea.

4.1.1: Smart & uLearning: The Formal Context for Mobile Learning in South Korea

The objectives of higher education in South Korea, encoded in many government-sponsored directives and university curricula, have been redrawn in light of the perceived advantages of technology enhanced learning. These objectives include a nominal pedagogical shift towards constructivist education and collaborative learning and the employ of technology to enact these shifts, including blogs, wikis, and social media (Pang, 2012). These objectives are enacted through the use of terms like mobile learning, eLearning, and smart learning (Ministry of Education, Science and Technology, KERIS, 2012),

Smart learning, although often associated with the employment of smart technology (laptops, mobile phones, and tablets) is an attempt to emphasize the learner over the technology being employed for the learning. A definition of smart learning was proposed in 2009 that first emphasizes the individual over the technology and secondly tailors learning through a technological infrastructure according to the learning needs of the individual (Kim, Cho, Lee, 2012). The Korean Ministry of Education, Science and Technology (MEST) formalized the definition of smart learning to emphasize the following:

- self-directed learning with instructional presence reconfigured as facilitation

- experiential learning with problem solving and authentic field and simulated activities
- adaptive learning where learning is reconfigured and adapted to the learning needs and progress of the individual
- Learning with resources and content available from both the public and private sector, including social learning as found through social media
- Technology embedded learning where technology is available to support anytime, anywhere learning (Noh et al., 2011)

Smart learning, when positioned as such, encompasses and parallels many of the positions of mobile learning as adapted for this thesis: "resources and content available from both the public and private sector" mirroring Sharples, Taylor, & Vavoula (2007) position of mobile learning as involving "public and private processes"; technology "available to support anytime, anywhere learning" signals a reversion to earlier, more technologically, spatially, and temporally deterministic positions of mobile learning (discussed earlier in Kukulska-Hulme et al., 2005; Quinn, 2000; Traxler, 2005, & Roschelle, 2003). The positions of mobile learning emphasizing interactional context (Dourish, 2004) and both cognitive and material transformations (Sharples et al, 2007; Kress & Pachler, 2007) assume some measure of "self-directed learning", "experiential learning with problem solving and authentic field" activity, and adaptive learning "where learning is reconfigured and adapted to the learning needs and progress of the individual." Yet this South Korean smart learning position departs from mobile learning as positioned in this thesis; the South Korean smart learning model still assumes, even centralizes, measures of institutional or instructional control.

As positioned formally in South Korean education as a totalizing concept under which mobile learning, eLearning, and uLearning are subsumed, smart learning

provides an overriding pedagogical structure for the use of mobile technology in higher education in South Korea. As positioned within smart learning, mobile learning reverts to an emphasis on the anywhere/anytime aspects of technologically assisted formal learning. It also represents positions juxtaposed from the evolving UK & European models where shifts away from technologically, spatially, or temporally deterministic positions of mobile learning have been permitted and tacitly encouraged.

Yet, it is important to establish that formal mobile learning in higher education in South Korea can be presented as a discrete mobile learning project or activity, or as a manifestation of a smart learning pedagogy. This is made evident in the research projects described in the academic literature, which include smart learning environments for uLearning education (Song, N., 2011), learning success factors stemming from learner interactions (Lee, S.H., 2012), and empirical analysis of learning effectiveness in uLearning environments using digital textbooks, textbooks being a MEST initiative in keeping with its smart learning objectives (Jeong, 2012). These projects exploring the use of ICT and mobile technology in formal higher education often couch their explorations in smart and ubiquitous learning terminology. Therefore, it is necessary to establish that smart learning, uLearning, elearning, and mobile learning are overlapping fields of meaning and application, fields that regularly employ mobile technology to meet their pedagogical ends. Mobile learning exists in South Korea almost exclusively as an element of a larger smart learning structure. However lacking these terms might be analytically, it is necessary to understand their influence over formal mobile learning in higher education in the South Korean context.

Within this structure, mobile learning is seen through the lens of a ubiquitous field of activity as this content-driven definition of mobile learning suggests:

> "Learners in a mLearning environment want to have control over different proportions of educational media such as audio, video, animations, graphics, and text, based on a learner's learning context, personal taste, mobile situation, and budget. The same educational contents could be presented with different media combinations that are suitable for different mobility situations" (Chung & Lee, 2012).

In this context, mobile learning is seen as a personalized environment of media, context, and mobility- a specific manifestation of smart learning's adherence to responsive, authentic, and technologically embedded learning situations to support learner meaning-making. Yet, this South Korean position on formal mobile learning, emphasizing as it does content (Chung & Lee, 2012), technology (uLearning), and measures of instructional or institutional control (smart learning), is insufficient in providing a structure through which to follow the learning practices of South Korean graduate students. It ignores the interplay of the formal, informal, socialized, and individualized to the deference of the technology and the content. This is supported in the next section, which critiques how mobile learning is being approached from a learning design perspective; this section is critical in that it establishes the applied aspects of mobile learning in the South Korean context and notes where the use of mobile technology problematizes existing pedagogy (and formal mobile learning as seen in the smart learning context as a result).

4.1.2: Mobile Learning as Learning Design: Approaches and Tensions

Experimentation with mobile learning in Korean higher education has generated considerable interest in analyzing the effectiveness of existing pedagogy in light

of the affordances of mobile technology and the methods in which they are being used for formal learning effect. South Korean higher education is actively seeking to align pedagogy with the affordances of the technologies included in a u-Learning infrastructure, including mobile learning. This section briefly highlights research that sheds light on that process of analysis and alignment. The research presented here is not exhaustive, but rather is intended to illustrate the trends in the re-examination of pedagogy taking place in Korean higher education as a result of mobile technology use.

Ku (2011) suggests that the traditional top-down teaching model of South Korean higher education, due to its insistence on the cohesive integration of learning content and project aim, is insufficient for the pedagogical application of mobile learning. Mobile learning, according to Ku, has a broad range of content, platforms, and programme languages to enact that content in meaningful ways so that much formalized mobile learning needs to be redesigned from the stance of a specific teaching or learning model, a top-down approach centering on pedagogy. While agreeing with the prognosis that this approach inhibits mobile learning in higher education, this thesis suggests that a formal redesign based in a "specific teaching or learning model" is not the apt diagnosis. What this thesis advances is the assertion that formal mobile learning in the South Korean context is limited by extensive measures of institutional or instructional control (returning to Frohberg, Goth, & Schwabe, 2009) and would be invigorated not by a redesign around a specific teaching or learning model, but rather a broadening of application and observation across the informal and formal spaces of meaning-making.

Joo, Lim, & Lim (2014) take a broader approach to the pedagogy of mobile learning, dividing teaching and learning into discrete fields of activity with

respective mobile learning design attributes that need to be considered. They provide evidence of types of learner-centered content and activities based on distinct learning models, including self-directed learning. Self-directed learning is the subject of Yu & Kim (2008) research on the development of mobile learning to support autonomous learning used in parallel to established curricula in higher education. What this research suggests is considerable deliberation in higher education as to the appropriateness of existing pedagogy in light of the use of these 'new' mobile technologies. This deliberation is further reiterated and pedagogically advanced by Yang & Jang (2011) who articulate the need for the transformation of pedagogy to support design thinking in light of the learning potential of mobile technology. In short, the literature suggests that the pedagogy of higher education in South Korea is undergoing a transformation towards more constructivist approaches in light of the opportunities presented partly through mobile technology.

This research turns to activities with little to no institutional or instructional control, activities responsive to sociocultural modes of communication and socialization, activities that problematize these formal positions of mobile learning in the South Korean context. In the next section, this thesis establishes the informal field of mobile activity that decidedly impacts formal learning.

4.2: Socialized Practices & Close-Knit Peer Relationships in Mobile Technology: The Informal

This section establishes the complementary field through which much of the activity outlined in this thesis flows: the informal. The informal is grounded within the South Korean context, itself a mature, evolving, and often retraditionalized mobile field of activity. This maturity and evolution is presented in the first subsection detailing the history, maturation, and practices emerging from the

informal South Korean mobile learning space. This is followed by a discussion of the research related to mobile media in the South Korean context, and is capped off with a discussion of participation and further analysis of the evolution of the informal South Korean mobile learning context.

This section also attempts to situate the informal space enacted through mobile technology within the larger field of activity transversed by the graduate students in the humanities. This is more than a mere categorization or juxtaposition with the formal described in the previous section; this positioning begins to establish the broader field of activity through which these graduate students move, as well as the media and learning practices developed as a result of this movement. It is from this mature technological South Korean context that these practices are retraditionalized and where the tension emerges in the formal smart learning context discussed in the previous section, where pronounced levels of institutional or instructional control are at odds with or inhibit the practices emerging from this informal context.

4.2.1: History, Maturation, and Emerging Practices

With a technological infrastructure on par with any nation in the world, where 40% of its population enjoy a high speed, fixed Internet connection; and where there are over 111 mobile subscriptions per 100 people, South Korea enjoys an almost complete saturation of connectivity (ITU ICT, 2015). It is an environment of increasing mobility as mobile traffic accounts for 29% of all web traffic (We Are Social, 2015). With 30% of the South Korean population actively using social media and 27% of the entire population doing so through mobile (2015), there exists a rich environment for observing informal learning practices that might emerge from such use. Along with this connectivity comes with it a local capacity

for digital software, applications, and social media environments; South Koreans are accustomed to using technologies and applications developed in and for South Koreans. Further, they are used to using them at an early age as the following quote suggests:

> "…Korean adolescents (ages 12–18) own their first mobile phone comparatively earlier than those in Japan, China, India, and Mexico, and 80.6% of Korean adolescents have their own mobile phone (compared to Japan, 77.3%; Mexico, 64%; China, 48.9%; and India, 30.6%). In particular, Korea shows a higher penetration rate among younger groups: 87.7% of 12-year-old Korean adolescents already use mobile phones, which far surpasses other countries (Japan, 50%; Mexico; 45.1%; China, 27.7%; and India 11.6%)" (Ok, 2011).

Along with this early access comes subsequent negative implications (smartphone overuse as discussed in Lee et al., 2014), but also an array of mobile, media, and digital practices that present unique sociocultural characteristics as this section attempts to at least partly document.

To begin were "*eomjijok*", or thumbtribe groups, which can be seen as a representation of early (late 1990s to late 2000s) Korean mobile cultures. According to Ok (2011), these are South Koreans who have exceedingly swift texting skills that are used to communicate in an idiosyncratic code language, designed specifically to be understood by members of that group (or tribe) only. Jouhki (2008) and Shim et al. (2008) expand on the idiosyncratic practices that emerged from these groups, from political participatory culture to informal social communication to gender-based participation and social gaming practices in mobile communities. Many, if not most, of the early analysis of these *eomjijok*

cultures were centered on their "distinctive cultural identity" and "their significance in the transformation of Korean society", or an attempt to "sustain individualism against the traditionally collectivist Korean culture" (Ok, 2011). This is challenged at least partly in this thesis by the "retraditionalizing" process of Yoon (2003) discussed in subsequent sections. *Eomjijok's* significance as it applies to this thesis is their illustration of the existence of informal practices that sit aside and problematize the formal modes of communication and learning encapsulated in the smart learning configurations discussed earlier in this chapter. Yet, this *eomjijok* culture, despite failing to maintain its idiosyncratic "youth culture" exclusivity as smartphone usage has saturated the South Korean market, provides a template from which to observe and identify informal, learning, or media practices emerging from the South Korean mobile context.

There is considerable overlap between these *eomjijok* communities and the social media cultures that emerged both in the apex and the wake of *eomjijok*. These social media communities were at least partly predicated on mobile technology use. South Korea has a long and complex history of social media participation and use. As such, the sociocultural characteristics of that social media use reflect a particular approach to engaging with mobile and social media (Kim et al., 2011). Korean social networks tend to be much smaller than their Western counterparts and their motivations for participation (social support, some information seeking, less casual relationships) speak to a close-knit social network that reinforces the material peer communities (2011). Social media, like mobile technology, "reconfirms young people's peer networks, which continue traditional modes of sociality and cultural identity" (Ok, 2011), a stance that Yoon's (2003) concept of retraditionalizing would both affirm and qualify. What is challenged here in this social media and mobile technology use is the rugged individuality presupposed by earlier *eomjijok* communities, a useful balancing of informal mobile cultures.

South Korean mobile culture presents a unique mix of the individualized filtered through socialized practice, both in the formal and informal spheres.

Social media participation, particularly practices that readily align with disciplinary learning (blogging, for example), is most prevalent. Blogs represent a significant portion of the activity taking place in mobile environments among graduate students in South Korea, with over 40% of the entire Korean population operating a blog and over 20% contributing to blog-based discussion forums, numbers that expand when focusing on the age ranges that accompany the graduate students participating in this research (Global Web Index, 2011). One such example of a native environment used for mobile learning is CyWorld, a blogging platform and social network which illustrates the movement previously discussed between individualized and socialized activity (Chun et al., 2008 & Haddon, Kim, 2007). Yet, it is important to note the particular purpose that blogging takes in the South Korean context as a socializing rather than as a participatory or intellectual activity as made evident by Ok (2011) in the following passage:

> "While blogs are considered to be a private space compared to the more public-oriented online communities, young people use blogs primarily "to build and maintain social relationships" rather than to engage in "journalistic or participatory activities" (Kim, J.Y., 2006; Choi, 2006). Cyworld, introduced in 1999 and one of the first SNS services in the world, represents this culturally specific tendency in the Korean blogosphere."

Blogging becomes a mechanism for managing community membership rather than explicitly as expression or knowledge representation. It is here that overt

characteristics that suggest the applicability of community of practice theory (Lave & Wenger, 1991) are presented.

Cyworld also spurred the development of informal practices related to media, communication, and community development, as well as research documenting those informal practices. By way of example, Hjorth (2009c) documents the community practices emerging from Cyworld's "mini-hompy" (a portmanteau of miniature and homepage); Ok (2011) discusses the "cute aesthetics" of Cyworld as a means of encouraging "migratory practices across interconnected digital media spheres" (Hjorth & Kim, 2005) as well as the development of jargon specific to Cyworld use *(Cying*=doing Cyworld; *Cy-pein*=Cyworld fanatic/geeks, *Il-chon*=the first degree kinship, etc.) and Son (2009) critiques mobile phone photography practices emerging as a result of participation in Cyworld. Haddon & Kim (2007) detailed the confluence of social media and mobile practices emerging from Cyworld use. These modern informal practices, many of which have been adapted from *eomjijok* cultures and Cyworld, can be found throughout this thesis.

A further example is Daum, an internet portal with a blogging environment with considerable market penetration; Naver Blogs presents a third popular option for graduate students. CyWorld, Daum, and Naver Blogs have all since faded in use and importance, but they provided an environment where South Koreans were able to more fully develop digital informal and socialized practices, practices that have since transferred to other social media services. As of 2015, social media use has migrated to KakaoTalk (at 39% of total activity), Facebook (26%), Facebook Messenger (17%), Twitter (13%) and Naver's Line (9%) (We Are Social, 2015). What is significant about these market shares as it applies to this thesis is the predominance of messaging applications (KakaoTalk, Facebook Messenger, Line, and to a lesser degree, Twitter), which suggests a shift in the practices being

evidenced through them. This general migration towards messaging applications foregrounds texting, reciprocity, and exchange of media. These applications align with the mobile technology itself, which foregrounds similar activity (27% of the entire South Korean population used mobile technology to watch videos, 29% to play games, 30% to perform location-based searching, etc.).

This shift to messaging applications suggests a parallel shift to the informal practices contained therein, what Park (2013) might refer to as the reproduction and negotiation of practices and expectations, specific to the textual medium. As Park suggests this shift is familiar as "the original invention and popularization of the medium as well as the habitus that preceded it is still present in the memories of many participants within the new texting habitus" (2013); in the South Korean context, this shift is especially familiar as it represents a reversion to many of the practices found in *eomjijok* cultures: idiosyncratic language acting as code, blogs as diaries and platforms for mobile media, and media as community artifact. These informal practices, many of them media based, have spanned the *eomjijok* cultures of the late 1990s to the present day.

The mobile media practices emerging both within and outside social media in the South Korean context have been convincingly presented as practices (Ok, 2011) spanning "consumption and production, online and offline, high and low, and mainstream and independent" cultures, merging the domestic and banal (Hjorth, 2008), and providing gendered investigations of mobile practices (Hjorth, 2009a). These practices range from "micro movies (movies made for mobile devices), pocket films (movies made by the mobile device to be screened either on the mobile device or other screens including the cinema), casual games, location-based mobile games, and camera phone practices" (Hjorth, 2008). These mobile media practices extend from the informal 'low' youth cultures and their

photography practices to formal 'high' film cultures, made most evident by acclaimed Korean director Park Chan-Wook directing a feature film with a smartphone (Snyder, 2011). With such practices being adapted from the informal to the formal (filmmaking), there is evidence of practice sharing.

Many of these informal mobile media practices have been paired with formal modes of disciplinary participation by the graduate students participating in this study. Hence, we have a precedent for establishing the flow of activity between the formal and the informal. These practices are viewed as learning practices, practices emerging from interactional context (Dourish, 2004), a sociocultural context designed to address a process of "coming to know" through the mastery of tools (Saljo, 1999). Mobile media, as positioned in this thesis, is seen as an artifact of that learning process.

4.2.2: Participation, Retraditionalization, and Analysis

This learning process is filtered through a sociocultural Korean laminate. It undergoes, or emerges from, a "retraditionalization" (Yoon, 2003) of South Korean practice through the globalized mobile medium. It would be erroneous to minimize the impact of this process of retraditionalization on the subsequent learning trajectories (Wenger, 1998) advanced further in this thesis. Yoon (2003) advances the idea that much of the idiosyncratic nature of these online social interactions and mobile practices are driven by the uniquely Korean concept of *jeong* (Korean: 정), defined as:

> "an expression of affective and attached relationships between people closely related to one another. *Jeong* is, on the one hand, based on an extended form of familism in that it emphasizes the strong attachment

> between close people within the network...Once someone begins to be considered as a member of the network, he or she is treated as family by other members and, in consequence, it becomes extremely difficult to keep away from the network…" (2003)

Jeong, as such, acts as a binding agent, a local sociality as described by Yoon (2003), governing or structuring social interaction. Jeong permeates social relationships across the South Korean context. It manifests itself formally in the disciplinary space in intricate "senior-junior" (Korean: 선배/후배, or *seonbae/hubae*) relationships; informally, it manifests itself in the social communities in which these graduate students participate through mobile technology. Informally, jeong formalizes many of the social practices emerging through mobile technology, evident in the norms and importance of reciprocity:

> "The members in the friendship circle are subject to the obligation to accept as well as the obligation to reciprocate (Taylor & Harper, 2002). Text messages play a particularly important role in this sharing through the mobile by maintaining continuous connection…the continuous reciprocal ritual tends to strengthen the ties between members without intentional disconnection or 'chewing out', which refers to ignoring calls or messages from others. Young people consider chewing out to be one of the worst etiquettes in the use of the mobile" (Yoon, 2003).

Continuous connection and disruption of that connection are equated along the spectrum of etiquette, much as they would be in face to face relations. Mobile technology accelerates and intensifies the manifestation of jeong by allowing for "individuals to maintain states of hyper-connection and hyper-awareness of others. That is, users can engage in multiple social communication networks at

any moment, continually access the various levels and scales of multi-layered communication contexts" (Lee, D.H., 2012). This hyper-connectivity and hyper-awareness of others provides opportunity for more sophisticated permutations of jeong in South Korean society, and positions mobile technology as an agent in maintaining close-knit social communities both online and off. As such, jeong, a traditional social agent in the South Korean culture, is "retraditionalized" in the mobile space. The importance to this thesis is the impact that these seemingly traditional sociocultural practices, this local sociality, manifested in the mobile space have on the trajectories of these graduate student. They govern and structure many of the learning interactions evident in this thesis.

However, retraditionalization in the mobile space is not monolithically prescriptive. Many individualized practices problematize the socialized practices discussed in this section. Jeong is consistently negotiated, retraditionalized, and occasionally subverted in the mobile space with movements between states of informal, formal, socialized, and individualized activity (Park, 2011). While this thesis has explicitly avoided technologically deterministic positions of mobile learning, it is instructive to view one mobile application itself as a set of coded practices spanning the formal, the informal, and the socialized, one developed by and for South Korea: KakaoTalk.

4.3: KakaoTalk: A Brief Study of an Embedded Tool

KakaoTalk is a mobile messaging application developed in South Korea that assists in retraditionalizing many of the socialized and informal practices discussed thus far in this thesis. KakaoTalk is the dominant social media application and environment in South Korea at 39% of all social media countrywide (We Are Social, 2015), assuming the position vacated by Cyworld,

which peaked at 25 million active users-approximately half the country's entire population-in 2011 (Digital in the Round, 2013). The concentration and frequency of KakaoTalk's use is staggering: 27.5 million users sending 420 million messages daily, which translates to 43 minutes and 150 messages daily for each user (Yonhap News, 2012 taken from Jin & Yoon, 2014). It advances the long South Korean tradition of social media use discussed earlier in this chapter.

Technologically, it provides functionality such as text messaging (either 1:1 or group), multimedia messaging (audio, video, imagery), voice chatting and video chatting, games, voting, and scheduling. It is also a mobile first development, meaning that it was designed and exclusively disseminated as a mobile application. It is built on an open platform insofar as it allows external developers to build from its application programming interface (API) and software development kit (SDK), which has translated into hundreds of applications for the service.

More importantly for the purposes of this thesis, KakaoTalk is deeply integrated into South Korea socialized practice, both informal and formal, activated through mobile technology; it is used by these graduate students to maintain participation across informal, socialized communities as well as formal, socialized communities. As an environment for communication across all the fields (Park, 2011) outlined in this thesis-socialized, individualized, formal, informal-it is unsurpassed. As an environment for both structuring and evidencing mobile technology use, it is also unsurpassed. As such, it is methodologically ingrained in this thesis as a data collection method (discussed in Chapter 5) and as data itself. Without KakaoTalk, the extended movements and trajectories presented in this thesis might not have been otherwise evidenced.

It adapts many of the design features from earlier iterations of South Korean social media discussed earlier in this chapter, particularly as it relates to Cyworld's personal messaging narrated and presented to a close-knit network (Hjorth, 2009c) and the "cute aesthetics" of Cyworld (Park, 2011) as a means of encouraging "migratory practices across interconnected digital media spheres" (Hjorth & Kim, 2005). KakaoTalk is designed to maintain close-knit networks through digital communication that enhances connections across a range of communication channels: every sticker picture, emoticon, and filtered avatar ("cute aesthetics"), every game played collaboratively, every chat detailing the activities and observations of the day (a personal narration), and every movement between one community to another, formal or informal ("migratory practices across interconnected digital media spheres"). KakaoTalk inexorably and implicitly links these communities, even encourages migration between them, by presenting them simultaneously in its interface. Once linked, KakaoTalk allows for maintenance of community participation across a myriad of media channels and with little effort; every emoticon builds jeong across informal, social communities and every screenshot of a lecture slide or audio recording of a group discussion builds camaraderie in formal, academic communities.

KakaoTalk differentiates from social media developed outside of Korea (particularly Facebook) in that it operates in a closed social environment. KakaoTalk does not allow users to see the friends of other users (Ha et al., 2015); as such, it ascribes to the particular characteristics of South Korean social media use as being designed to maintain and augment close-knit social communities. Further emphasis in KakaoTalk on closed group chats (as well as 1:1 chats and even secret chats) points to the importance of chatrooms in social media and socialized practices developed and retraditionalized through social media (Kim & Lim, 2015). It has been adapted from these informal and socialized purposes quite

readily into the formal and academic (positioned as a socialized learning tool in Kim, Lee & Kim, 2014, for example).

Yet, KakaoTalk does not exist free from complication. There are several desultory effects of the hyper-connectiveness and hyper-awareness (Lee, 2012) that KakaoTalk enables, most specifically notification stress (Yoon, S. et al., 2014). Bound to some degree by the South Korean norm of reciprocity, or immediate and perpetual interaction retraditionalized and augmented in KakaoTalk as hyper-connectivity and hyper-awareness, many South Koreans suffer acute stress at the sight of a push message indicating new activity on their mobile technology, knowing that an adherence to maintaining connectivity demands they answer it. Yet, these desultory effects are not limited to informal, socialized communities; they extend across the spectrum observed in this thesis. Smartphone addiction in university students, as discussed in Lee et al. (2015), at least partially results from the norm of reciprocity.

It directly affects the learning taking place in higher education in South Korea where higher degrees of smartphone addiction inversely correlate to lower levels of self-regulated learning. Much of this addiction is enacted, and indeed enabled, through KakaoTalk. This along with recent security concerns stemming from a data breach that led to a migration of millions of users (detailed in Yang, 2014), suggests the ephemerality of KakaoTalk's dominant position in the flow of mobile activity in South Korea. Yet, for the purposes of this thesis, it is critical to establish KakaoTalk as a means of managing multimembership through distinct South Korean practices (Yoon, 2003) and within a specific mobile technological context. It stands dominant in this particular context.

To illustrate the interplay between the informal, formal, individualized, and socialized, the methods to surface these movements are now presented. As such, the methodology and research design proposed for this thesis is presented.

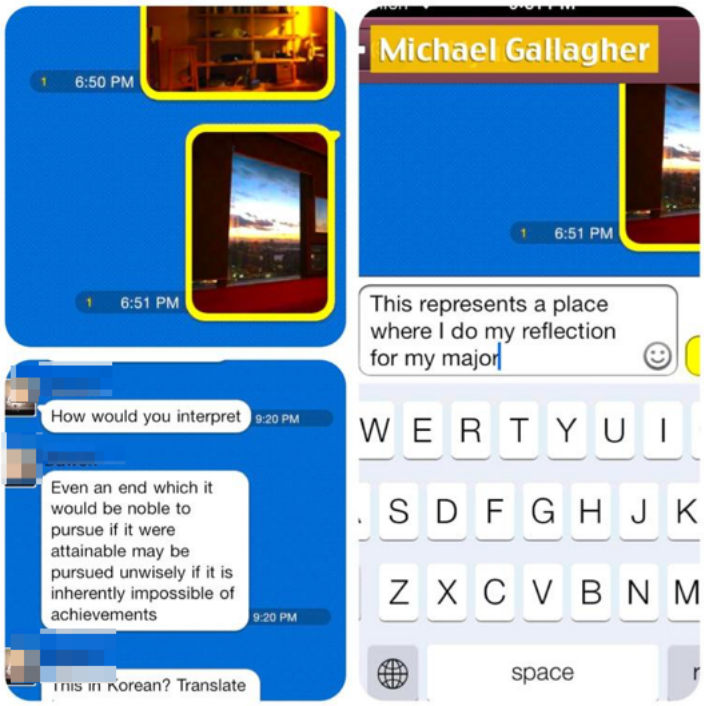


Figure 3: Sample KakaoTalk screen

Chapter 5: Methodology

5.1: Introduction

This chapter begins with a discussion of the methodological needs emerging from the theoretical framework of Chapter 3, followed by a review of the methodologies being used in mobile learning in higher education, a critique of these methodological approaches, and their suitability for answering the research questions in this thesis. The research questions are then presented in greater detail along with the methods used to answer these research questions. This discussion transitions into an overview of the research study plan and a timeline for completion of both the pilot project and the overall research study outlined in this thesis. There is considerable attention paid throughout this chapter to the progression from theory to method, and an attempt is made to present this in an accessible and chronological format. Following this, there is a discussion on my role as researcher in this study and the ethical considerations involved in conducting a study of this scope.

As the overall aim of this research is to determine the trajectories being evidenced at the nexus of multimembership and to determine how mobile technology structures and evidences these, the methodology presented in this chapter reflects that by providing a means of moving from material to learning practice to trajectory. As discussed earlier in this thesis, this is done through a positioning of the nexus of multimembership as the focus of this research, rather than within a particular community. This is an intentional repositioning that establishes fidelity to the learning practices of the graduate students under observation; it reflects the fluidity of student engagement across informal, formal, socialized, and individualized spaces (Park, 2011), acknowledges the learning that occurs when students engage with mobile technology across informal and formal strands of

learning and across different disciplinary contexts (Looi et al., 2009 & Sharples, 2006) and across disparate learning environments (Sharples, Taylor, & Vavoula, 2007). This research is structured in such a way to provide accurate accounts of practice as structured through mobile technology that might be used to analyze disciplinary engagements, to identify what practices are being used to structure these engagements, and to chart trajectories in relation to community participation as a result.

5.2: From Theory to Methodology

Advancing the theoretical structure of community of practice theory, and more specifically its attendant nexus of multimembership and learning trajectories, the thesis now shifts to methodology. What methodological structure does this theoretical position both presuppose and subsequently what data can be collected by this methodology that speaks to the research questions? This section briefly attempts to speak to this link from theory to methodology before beginning the discussion on the methodology chosen for this thesis.

The environment being observed in this thesis is the larger social topologies of graduate students in the humanities in South Korean universities as structured by mobile technology. The use of community of practice theory foregrounds specific elements of this observation and how these elements speak to the necessity of a particular methodology; the definition of mobile learning advanced in this thesis echoes this necessity. As such, the following attempts to isolate the methodological requirements as drawn from the theoretical position itself.

Practice in Situ and Social Topologies

As positioned in community of practice theory, "learning is an integral part of generative social practice in the lived-in world" (Lave & Wenger, 1991, p.35). The

"lived-in world" aspect of this position foregrounds the necessity of positioning this research in a naturalistic setting, where the activities being made manifest, the artifacts being produced, and the trajectories being suggested emerge from an environment paralleling the lived social topology of the student. In short, it must approach, but not merely replicate, authenticity. Beyond the sheer difficulty in recreating the nexus of multimembership in a controlled, experimental setting, the resultant trajectories being observed would fail to account for "generative social practice" as what was being observed could not in good faith be equated to anything other than a response to the controlled environment itself.

This is not methodological posturing; the use of community of practice theory itself implicitly demands an *in situ* observation of the practices being suggested, the materials being produced, and the trajectories emerging as a result. As such, any methodology would need to reflect that need for either direct observation or an approximation of authenticity in the environment being observed.

While a slight departure from community of practice theory as originally positioned, but supported by later iterations posed by the nexus of multimembership (1998), landscapes of practice (Wenger-Trayner, E. & Wenger-Trayner, B., 2014), and the social topologies of Bayne et al. (2014), this thesis broadens the environment being observed to include the communities in which these graduate students engage, and the host of practices they employ to navigate through this larger environment, the combination of which might suggest a trajectory in relation to a community. This is more than a methodological consideration, but has profound impact on the methodology being suggested.

To begin is the reluctance of this author to ascribe to a positivist position in the interpretation of activity and material as much of what will structure these

learning trajectories and their nexus of multimembership will not be explicitly 'observable.' Much of the activity of managing multimemberships, indeed even in the participation in select communities, will remain stubbornly tacit and "attempts to reduce knowledge to information and to reject tacit knowledge as no more than uncodified explicit knowledge" (Duguid, 2005, p. 1) will prove untenable. While the tacit elements of academic practice (Gourlay, 2011, 2009; Lea, 2005) have been advanced as a weakness of community of practice theory overall, this author suggests an attendant methodology must be employed that seeks to surface if not the tacit then the effects of this tacitness. This is reflected as well in the adoption of Bourdieu's habitus as an agent in the overall position of mobile learning; this author suggests that an attendant methodology must account for these latent or tacit dispositions in response to community interaction.

Further to these positivist critiques, this thesis is deliberately attempting to avoid any *a priori* structuring in identifying which entity is exerting influence over another, from which this author believes that community of practice theory occasionally suffers. If Community A is positioned as the center of observation and Participant B is positioned peripherally striving for some sort of "conferred legitimacy" (Lave & Wenger, 1991, p. 92), then the actions of B will always be structured as emerging from or being the direct 'product' of A. While broadening the theory to include the nexus of multimembership (1998) and landscapes of practice (2014) in later work, community of practice theory inevitably presupposes the predominance of the community over the individual.

Yet this does not negate the theory's analytical potential; it merely speaks to the necessity of a broader methodological vantage point. Situating this observation exclusively within one community of practice (the disciplinary community, for example) negates the potential agency of the graduate student in their

interactions with the community, the role of the "imagined communities" of Kanno & Norton (2003) in articulating an intentional state entailment (Bruner, 1991), and the adapted practices that emerge as a result. By broadening the range of observable activity beyond a community of practice, or even a landscape of loosely connected communities of practice, to include both non-communities of practices and even non-socialized activity thwarts this *a priori* structure. Speaking directly to community of practice theory yet again, a methodology is required that surfaces the range of practices and spaces being transversed (the informal, formal, socialized, and individualized spaces of Park, 2011) and does so in a way that surfaces these movements in an analytically meaningful way.

Mobile Technology

Another dimension that this methodology must address, an under-theorized and under-researched one in community of practice theory, is how activity is both managed and structured by mobile technology. Mobile technology in this South Korean context goes well beyond managing participation in a particular disciplinary community of practice, well beyond evidencing "the cultural transparency" (Lave & Wenger, 1991, p. 30) of a particular technology in its sociocultural practice, and well beyond evidencing "the cultural practice that carries with it a substantial portion of that practice's heritage (p. 101). Technology extends beyond acting as a means for legitimate peripheral participation in a particular community of practice as "becoming a full participant certainly includes engaging with the technologies of everyday practice…" (p. 101). As this thesis suggests, mobile technology is the means by which these graduate students manage their multimemberships, their engagements with particular communities, the practices and artifacts that those engagements demand, and where the subsequent learning trajectory is being revealed. It in large part informs the contours of their social topologies. It not only evidences activity, it structures what

shape that activity will take. While community of practice theory might theorize as to what history is embedded in this technology and what its use might suggest of peripheral participation, this thesis broadens this to observe how it is used at the nexus of multimembership amidst a set of trajectories, some of which might suggest a relationship with a disciplinary community.

Methodologically this presents opportunity as mobile technology allows for, even foregrounds, particular forms of data: image, audio, video, text, GPS data, and so forth. As such, a methodology that accounts for these learning trajectories within mobile technology would hasten to make full use of the diversity of data that can be collected. For each mode of data is an artifact unto itself as it "carries with it a substantial portion of that practice's heritage" (p. 101). Where this thesis diverges from community of practice theory slightly is this emphasis of the centrality of mobile technology in this process, particularly as evidenced in South Korea. This thesis now must turn to further factors shaping the methodology emerging from this discussion, namely my position as researcher and the ethical discussion of this research.

5.3: The Methodological Aspects of My Role as Researcher

My role as researcher is predicated on the South Korean sociocultural context, the roles prescribed therein, and the types of data suggested by the methodological considerations as discussed in the prior section. Please note that much of this section is drawing on the discussion of the South Korean context described in Chapter 4. The biggest distinction to draw is as my role as outside researcher and not as instructor, researcher (Mercer, 2007) or insider participant observer (Herrman, 1989). This role as outside researcher is predicated on my lack of formal relationships with either the graduate students being observed or their associated

universities. This is a necessary methodological consideration as suggested by the South Korean context.

If this methodology were constructed with participation from current or past students, or those associated with the university in which I am employed, and beyond the ethical questions that would emerge as a result, the generated data itself would suffer as the rapport that exists between South Korean students and their faculty would predicate the generation of particular types of data. While this data wouldn't conclusively be regarded as supporting these students' perceptions of what they suspect their faculty member would like them to suggest (a classic response bias as discussed in the context of South Korea in Dossett, 1988), it would be difficult to treat this data as transparent or indicative of realistic accounts of practice. As the focus of this research is to identify a nexus of multimembership amidst a larger social topology and identify, if possible, a trajectory in relation to a particular disciplinary community, then the South Korean sociocultural roles involved in faculty and student interaction would need to be disentangled. Otherwise, this would be a methodological enactment of the *a priori* error described earlier: by foregrounding the faculty research is foregrounding the community in which the faculty draws identity. If current or past students were chosen for this research, the results would be as likely to reveal the learning trajectory of this author rather than the trajectories of the participants.

The second reason revolves around my role as non-Korean; evidence has suggested that the rapport between Korean students and international faculty is more likely to result in active mentoring relationships (Robertson, Ham, & Min, 2014). While welcome pedagogically, this poses a methodological concern as these burgeoning mentoring relationships would likely produce iterations on the attendant trajectory being suggested in the data. It would be difficult if not

impossible to disentangle the potential response bias emerging from such a mentoring relationship, if one existed.

As such, the methodology for this thesis will position my role as outside researcher, a position that proves consistent with my work in South Korea to date. My past experience in education in South Korea (1998-2006) was limited to private educational institutions outside Korean higher education; my current employment (2013-2016) is as Assistant Professor, a title that suggests the authority awarded the position in the South Korean sociocultural context, but which would be functionally equivalent to the Lecturer role in the UK. Yet this functional equivalency isn't revealing of the sociocultural context. The linguistic hierarchy involved is significant as Lecturer (Kang-sa: 강사 in Korean) is significantly less prestigious than Professor (Kyo-su: 교수); lecturer in the South Korean sociocultural context is equated with the activity or trade (teaching) as opposed to the profession. While seemingly insignificant, this raises methodological issues as my role would be bestowed with a formality that might influence the data being collected from these students, despite this lack of prior relationship. This is not exclusive to the Korean context, as "the binary division between researcher and researched is seen as problematic especially with regard to privilege and power" in Western contexts (Traxler & Bridges, 2004, p.204), but it is especially acute in the honorific traditions associated with Korean culture.

Despite this necessary outside positioning, there are significant disadvantages. While it provides a distanced vantage point from which to articulate the methods for collecting qualitative data, it limits the prior rapport that might exist within the social community being observed. It makes authentic insider observation impossible and the potential for any sort of practitioner ethnography is removed. Instead, I aim to rely on faculty introductions and responses to open calls for

participation to confer legitimacy as outside researcher. These introductions and faculty collaborations provide entry points, but they do not automatically (or even inevitably) grant access to the communities that exist amongst these graduate students. This lack of legitimacy based on an ambiguous status (although faculty, I am not *their* faculty) is especially acute in the South Korean context.

My role as outsider would also inherently limit assumptions I had towards the efficiencies and processes of these particular universities included in the sample, or the use of ICT and mobile technology by graduate students in South Korea. The focus of this research are the graduate students themselves and how they made meaning in their communities through their use of mobile technology, so while universities were the locus of the activity being observed, the data collected was geared towards determining how graduate students participated in a larger set of communities and how they interacted with these to make meaning. As such, it is felt that distancing the relationship of research and participant away from any existing faculty-student relationship at any specific university and towards a larger set of community-based roles and relationships in higher education was necessary.

Yet, there are significant ethical dimensions to this position as outside researcher as well as with the methods and technologies that will need to be employed as part of this research, as the next section on ethics discusses.

5.4: Ethical Considerations: Mobile and The South Korean Context

The methodological design being suggested in this thesis poses ethical questions. It would involve data collection from graduate students in the humanities across several different South Korean universities. Participants would likely be interviewed to determine their use of mobile technology, what they produce in

mobile technology, and how, if at all, that mobile technology use is used in their learning practices and overall learning trajectories. These interviews and other reflective questions would be supplemented with secondary data collection of representative works of mobile media created that support or represent these learning practices. As much of this work would involve the use of mobile technology, there are significant ethical questions that would arise as a result.

To begin, however, there must first be a consideration of the specifics of the ethical domains of the study presented in this thesis: the UK and South Korea. From the UK perspective, there is a significant apparatus from which to reflect on the ethical dimensions of one's research. To offset some, but not all, of these ethical challenges at the onset, there is a strict adherence to several overarching ethical structures, including the British Educational Research Association's (BERA) Ethical Guidelines for Educational Research (2011), particularly in obtaining prior informed consent with "clear indication on what data will be collected and how the data will be used"; and clear indication of "their right to withdraw from the research at any stage they deem fit." The ESRC Framework for Research Ethics (2015) parallels this principle with "freely given and fully informed consent", elsewhere referred to as "valid consent." Yet, valid consent as treated in much research design is posed as a one-off, all-encompassing activity that minimizes the evolving awareness of the participant as both participant and co-collaborator in the research process. This is well articulated in the question posed by Traxler (2013):

> "Is the notion of individual one-off informed consent as the basis for research intervention inappropriate in a post-positivist world, inappropriate for collectivist cultures and inappropriate for fluid, complex and abstract systems such as TEL?"

This notion of informed consent is particularly acute with mobile learning as it "may be difficult to explain fully the scope of mobile learning in a succinct and appropriate fashion in a way that is consistent with mobile learning itself" (Traxler & Bridges, 2004, p.205), which is especially present in this research as there were issues of translation from English (author's drafting of the consent language, for example) to Korean. As such, the fidelity of the language is beholden to be "consistent with mobile learning itself" and maintain fidelity to both the Korean language and South Korean research practice.

Further, mobile learning complicates informed consent as "a mobile learning system may not preserve persistent learner identities across sessions or across devices, thereby possibly confusing the source of consent and the data to which it relates" (Traxler & Bridges, 2004, p.205). This persistency of the relationship of identity, data, and consent requires an offset or accountability in the methodology.

While the answer to the question of whether one-off consent remains viable, particularly as it applies to collectivist cultures and mobile technology, the question itself has guided much of the structure of the methodology emerging from this thesis: can one-off informed consent be considered ethical in light of the complexity of the data being collected, as well as the evolving awareness of the research participant themselves? This is especially true with mobile technology that generates data that greatly complicates anonymity, but also to the complexity of the data itself (metadata, GPS coordinates, browser and search history, and so forth) and how that data is being used (as part of search engine logic, recommender systems, a monitoring and surveillance apparatus). With mobile learning, there is a general trend away from one-off consent approval and towards positioning participants as collaborators in the research process (discussed in Lally

et al., 2012). It is now growing increasingly common for mobile learning research to employ participatory research design (Danielsson et al., 2004), which, while flexible, poses ethical challenges as well, particularly as informed consent at the onset of research is difficult as participatory methodology suggests an ongoing negotiation of the goals and uses of the data. It is important to note that participatory methodology foregrounds the belief, one adopted in this research, that ethical research design is an ongoing process. While informed consent at the onset of research is critical, it isn't enough. Informed consent must be embedded throughout the research process.

As such, a pragmatic decision is made in this thesis to break the methodology into stages with participants allowed to withdraw from activity as they see fit, which approximates, to some degree, an ongoing process of informed consent. Participants were free to refuse to participate in subsequent phases of data collection.

Yet the types of data being collected make the participants, to some degree, co-creators or co-researchers in this research process (Vavoula & Sharples, 2009). As such, I have an ethical responsibility to ensure that they themselves are able to follow the ethical guidelines as constructed by BERA for conducting ethical research. This required clear explanation in the information sheet and consent form. Definitions of what mobile learning is and how it is manifested still, after over a decade of research, vary considerably. As such, it is difficult to clearly define the mobile learning context being observed, the proposed outcomes, and the relevance of the data collection points to the overall research questions. This all directly affects informed consent. If researchers find it difficult to articulate, does such a thing as informed consent exist? For the purposes of this research, informed consent was established through the succinct articulation of the overall

aims of the research project, the research questions, the data collection points, and how those points relate to the research questions. This was followed by a clear presentation of what the participant will be expected to do in this context and their rights throughout the process. BERA's Guideline 14 (2011) for Openness and Disclosure articulates the need for transparency clearly through the avoidance of "deception or subterfuge", both of which have consciously been avoided in this design.

Principle 4 of the ESRC Framework for Research Ethics (2015) states that "research participants must participate in a voluntary way, free from any coercion" in the research. This stipulation dovetails into the concerns discussed earlier regarding my role as outside researcher as opposed to mentoring faculty, the latter of which would complicate the issue of free participation. Further, participants' right to privacy will be honored by anonymizing the individuals, the data, the institutions, and the artifacts under analysis, in keeping with the third ESRC ethics principle states that: "the confidentiality of information supplied by research subjects and the anonymity of respondents must be respected" (2016). Yet, it in this principle, one with parallels in BERA (2011) and indeed in most ethical frameworks, that tensions emerge as a result of mobile technology. These ethical concerns are accelerated by the nature of data collection itself, which extends beyond the classroom and into the lived world and as such data collection can involve evidence of footprints through that 'lived world'. This can include logs of user interaction, time and location, and self-reports from users (Vavoula & Sharples, 2009), all of which can "inadvertently expose participants to unsafe or unsavoury behaviour or material via various media, from external web-based sources and from other participants" (Traxler & Bridges, 2004, p.205). These concerns specifically relate to BERA (2011, p.7):

> "Researchers must recognize the participants' entitlement to privacy and must accord them their rights to confidentiality and anonymity, unless they or their guardians or responsible others, specifically and willingly waive that right."

The prior consent forms and communication related to rights as research participants were partly inspired by materials, including the Research Ethics Handbook, provided by the Institute of Education University College London (IoEUCL, 2015). Further to this, this research underwent and successfully completed an ethical review process in 2013 at the onset of the research activity being discussed at the Institute of Education University College London managed by my supervisors, Dr. John Potter of IoEUCL and Dr. Niall Winters, currently of Oxford University. The South Korean ethical clearance was granted in consultation with the Dean of my department at Hankuk University of Foreign Studies in keeping with South Korean ethical research practice, discussed further in this section.

The proposed data to be collected is intended to make visible participation in multimemberships. Yet, there is an issue of the reliability of evidence in that the participant can craft responses, artifacts, and reflections that speak more to their identity (projection of self) than to their authentic engagement with either mobile media, their discipline, or both. This reliability issue is being mitigated through the multiple streams of data collection and their triangulation. This triangulation might be simply reinforcing the consistency of this self-projection rather than evidence of disciplinary or mobile participation. This is an ethical challenge as these self-projections might reveal characteristics or activities damaging to the graduate students' participation in their chosen field. An adherence to anonymity and privacy in all contributed data will hopefully serve to mitigate this possibility.

A further ethical concern is the juxtaposition of this research analyzing informal and formal mobile learning use with more government-led top-down approaches to mobile learning to support disciplinary practice in South Korean universities. As these universities are required to comply with government directives concerning the use of ICT, it is important to anonymize the institutions so that this research will not be disadvantageous to the university when defending their ICT use.

A further ethical concern is the submission or linking to evidence in "the open." There are two data points that have with them the possibility of a lack of privacy, or more directly, that carry with them the graduate student's name. These data points are the self-reflections conducted at multiple intervals over the course of the study and the submitted media. Participants in this study were given clear instructions and background information on the nature of the study and their participation in it. In an attempt to lower the bar to participation, I have made these two data points open in terms of where the evidence is deposited. If the graduate students had the inclination, they were free to post their materials to their own sites or blogs, or they are free to post these materials anonymously (either directly to me through email or through an anonymous site). This openness in terms of data collection is a further attempt to extend the authenticity of the narrative interviews into this secondary environment of data collection. It allows participants, if they so desire, to associate this work with their academic identities and to deposit and disseminate that work from an authentic context (their own site). However, this was an optional characteristic of participation; all participants were presented with the option (established in the information sheet as the default option) of submitting their work anonymously. This 'openness' in terms of data collection mitigates the ethical issues involved in ownership of material collected across different contexts (Traxler & Bridges, 2005) and the rights of

participants to know when and how they are being monitored. All of these points were succinctly and clearly presented in the information sheet.

Yet, mobile learning inherently complicates the notion of data protection. BERA (2011, p. 7-8) outlines how data collected in research is to be collected, stored, and used as "the confidential and anonymous treatment of participants' data is considered the norm for the conduct of research." As participants are "entitled to know how and why their personal data is being stored, to what uses it is being put and to whom it may be made available" (BERA, 2011, p.8), this language was included in the consent form and in the project information distributed to participants before signing the said consent form. The collected data was stored on this researcher's own devices through SpiderOak, a cloud storage service that uses a nested system of many small encryption keys. The coding, discussed later in this chapter, of the interview data was encrypted as well using an online qualitative service called Dedoose. All participants were explicitly told that they have access to their data on request and it can be deleted at any point in the research process. All data will be deleted upon completion of this thesis.

It is important to note that participants were compensated for their participation in this research project at a rate commiserate with the South Korean minimum wage (₩ 6030, or the equivalent of £3.51 per hour). This is in keeping with South Korean research practice where the expectation of compensation is manifest. Yet this researcher acknowledges "that the use of incentives in the design and reporting of the research may be problematic" (BERA, 2011, p.10) in terms of creating the potential for a bias in participant responses.

The ethical research environment in South Korea is rapidly evolving, an evolution predicated in large part to high profile cases of academic or ethical misconduct

(Gottweis & Triendl, 2006). As a response, ethics is now fast becoming a core facet of academic education, yet it is not uniform. Of the universities in South Korea:

> "only less than 20 % offer regular courses while a half provide online courses. 44 % provide students with research ethics education in the form of a one-time special lecture, and 24 % take the form of consecutive special lectures through workshops. It is notable that professors and administrative staff are also given research ethics education albeit it takes the form of one-time special lecture or a series of special lectures under the name of workshop" (Lee, 2014).

Ethical education is still in its infancy in South Korea and robust ethical practice is complicated through South Korean sociocultural practice which naturally pervades higher education. Due to hierarchies of rank and age inherent to the South Korean environment, there are blights due to undocumented student and research rights, as well as the practice of avoiding specifications in the research contract to allow for greater flexibility on the part of the researcher (Nho, 2016). These implicit practices run counter to much of the UK system of ethical practice in terms of explicit approval, articulate language, and so forth. This vague articulation of participant and research rights has directly and adversely affected the impact of institutional review boards in South Korea, which were developed in response to a previous round of ethical misconduct (Kim et al., 2003, p.3 & Lee, I.J., 2014), suggesting the lack of consistent ethical training, practices, and education are hampering South Korean academic practice.

Along with these ethical vagaries, conflict emerging as a result of participation is disadvantageous to the participant as "institutional arrangements for conflict resolution of universities are very deficient" and graduate student research

participants will expose themselves to retaliation if they express discontent or concern over the research being conducted (Nho, 2016). As such, the freedom to withdraw from research, so prevalent in the UK ethical literature, is tacitly contested in South Korea through the dynamics of a socialized hierarchy.

While great care was employed to ensure that South Korea sociocultural practices were adhered to (incentives for participation, for example; the use of Korean specific mobile applications and so forth), the explicitness of the rights of the participants in this research project was decidedly that: explicit. There were no ambiguities in the language being presented, no failure to emphasize their ability to withdraw from the research as requested, no missed opportunity to explain how the data would be collected and used, and how their identities would be protected.

Organizationally, there is no systematic ethical review process at the university level; several meetings were held with the Dean of my department to discuss this research, the data being collected, and how participants would be incentivized. Informal approval was provided by the university for this research. The work corresponds to ethical guidelines as put forth by the Korea National Ethics Research Institute, part of the Korean National Research Foundation, which were followed insofar as they applied to this research. In the absence of more applicable ethical codes of conduct, this research applies select codes from the Korean Psychological Association (2004), which produces a systematic ethical statement that approximates the statements discussed in this research and echoes select protections such as research participant protection.

Ethical practice, this thesis suggests, is naturally incomplete, never more so than when one is looking to synthesize two different sets of ethical practices emerging

from disparate sociocultural practices (the UK and South Korea). This ultimately requires a fluid approach, one that acknowledges the need for consent at various stages of the project, one that takes great effort to articulate the explicit rights and protections of participation, and one that treats the participant as collaborator in this process. While much of this runs counter to South Korean sociocultural practice, this was deemed a necessary counter as the rights and protection of the participants superseded any sort of fidelity to localized practice. Yet, ethics remains, and should remain, problematic, forcing on the researcher constant reflective practice. As this thesis moves from theory and ethics to the methodology itself, it must first be grounded in what has been attempted methodologically.

5.5: Methodological Literature Review

As this thesis is bound to understanding particular manifestations of trajectory, transformation, and mobility itself, it is subject to the methodologies of the social sciences as evidenced in the following:

> "Law and Urry argue that existing methods of research in and around the social sciences deal poorly with the fleeting – that which is here today and gone tomorrow, only to reappear again the day after tomorrow. They deal poorly with the distributed – that is to be found here and there but not in between – or that which slips and slides between one place and another. They deal poorly with the multiple – that which takes different shapes in different places. They deal poorly with the non-causal, the chaotic, the complex. And such methods have difficulty dealing with the sensory – that which is subject to vision, sound, taste, smell; with the emotional – time–space compressed outbursts of anger, pain, rage, pleasure, desire, or the spiritual; and the kinaesthetic – the pleasures and pains which follow the

> movement and displacement of people, objects, information and ideas" (Büscher, Urry, & Witchger, 2010, p. 1).

It is precisely in these elements- the fleeting, the distributed, the multiple, and the sensory- that this thesis and its exploration of mobile learning is situated. Methodologies must account for these to some degree. Capturing these types of activity, trajectory, and multimemberships requires a methodology that embeds activity in practice and practice in topology. It must be structured in such a way to bridge the methods of individualized mobile learning with socialized mobile learning, as made evident in the following:

> "Given the (semi) private nature of much of the engagement with mobile technologies, studies are often based on the learners' own accounts and metacognitive analyses of their learning, by means of semi-structured interviews, surveys, and diary studies with all the limitations such methods entail. Also, given the social nature of much mobile technology use around acts of communication, the challenge for researchers is not just to make tangible cognitive processes taking place within an individual, which at best manifest themselves indirectly in the creation of certain artefacts, but also how these processes are embedded in social interaction and affect, and are affected by, cognitive process of co-learners" (Pachler, Bachmair & Cook, 2009, p. 71).

Within the discussion presented thus far, a methodological structure emerges, one built on movements between these states, one that accounts for disparate data, and one that coheres this all into a trajectory. Now it becomes a matter of pragmatically translating this into a functional methodology. There are, however, several types of methodologies that have proven useful to conducting quantitative

and qualitative research in mobile environments. Please note that henceforth in this thesis, these will be referred to as mobile methodologies.

The first is the general translation or transportation of mobile learning into the accepted structures and practices of higher education; this proves difficult to conceptualize and hypothesize sufficiently to cover the variables being observed (Bird & Soreze, 2009). Mobile learning in the universities of South Korea exists in a particular tension between formal top-down driven models designed to support existing practices and informal, bottom-up, often student-centered and led mobile environments designed to provide social and peer support. Based on how the research questions are formulated, it does not exclude the use of either quantitative, qualitative, or a mixed method approach. In fact, some have gone so far as to state that a mixed method approach is optimal for mobile learning as it allows for the "capturing of different perspectives of the learning experience" as well as providing some mechanisms for validating collected data (Vavoula & Sharples, 2009).

A purely qualitative approach suffers from "the accuracy of recall" syndrome in the data collected through retrospective interviews, diaries, or attitude surveys reflecting the participant's concern in their self-projection (2009). The participant will adjust narrative in keeping not with the accuracy of their responses to the questions posed, but rather to their own sense of self-identity or in relation to the researcher. The accuracy of the responses will prove revealing in terms of self-projection and motivation for participation, but not always so for the questions asked directly. This can be mitigated through the collection of supplementary qualitative data, such as recorded video, audio, observation notes, and other artifacts, designed to contextualize the mobile learning in a larger context of interaction, or even across multimemberships. Qualitative methods provide a

safeguard for ensuring that themes and practices can emerge from the data collected that might not emerge from more strictly controlled methodological approaches. As such, this thesis is not as focused on methodologies that assess the impact of mobile interventions on the outcomes of learning as it is on methodologies that surface the movements and activity that are managed through mobile technology. This excludes much of the outcomes-based methodologies, typified by studies measuring the impact on the achievement of learning objectives by Finnish students (Seppälä & Alamäki, 2003), the impact on learner readiness and effectiveness (Al-Fahad, 2009), and the impact on recall from language learning (Chen & Hsu, 2008). While instructive, these studies are outside the scope of this thesis in their focus on performative or assessable elements of mobile learning.

Purely quantitative approaches often suffer from a lack of social, community, or motivational evidence for participation. These quantitative driven approaches might include technological solutions such as "mobile eye tracking or wearable interaction capture kits" or the more traditional means of collecting mobile technology use data and offering subsequent analysis based on specifically defined and controlled observation points (Vavoula & Sharples, 2009). This thesis intentionally attempts to avoid controlled observation points that aren't provided by the participant themselves through their data; rather than benchmark all participants towards a disciplinary specific metric or particular trait, this attempts to present trajectory provided by the participant and cohered through their own narrative.

There are several challenges involved in evaluating mobile technology use through a quantitative approach, most notably in those that move between formal and informal learning (McAndrew, Taylor & Clow, 2010). The approach that

McAndrew, Taylor, & Clow (2010) put forth for evaluating mobile learning in terms of both the quality of learning in technology and the nature of interaction with that technology provides evidence that a hybrid methodology is appropriate for observing such complex behavior. Although useful in terms of providing evidence of a hybrid approach, it proves less applicable as this thesis is concerned with existing practices, existing participation in multiple communities, and how mobile technology provides mechanisms for new practices to emerge. This thesis is not so much concerned with the quality of learning, but rather the structuring, evidencing, and potential transformation of practices as a result of mobile technology. Yet, McAndrew, Taylor, & Clow provide a convincing approach that hybrid methods approaches are appropriate for the mobile medium.

Seipold, Pachler, & Cook (2009) outline how this might be accomplished methodologically by stressing the focus of observation on the activities of learners in the context of university and their life worlds in mobile settings. This focus on activities across university and life world settings correlates adequately with the research questions' focus on graduate student participation in the humanities across informal, formal, individualized, and socialized settings. Further evidence can be drawn from the resources which learners are using "in terms of agentive and meaningful activities" (p.96). For the purposes of this research, there is an appropriation of the term potential in the phrase "potential inherent in these resources and activities" (2009) as meaning the potential of mobile use to transform practice and allow for meaning-making rather than a focus on the potential for structured output or formalized assessment. In short, this research is focused on practice rather than outcomes and the term potential is defined as such.

Seipold, Pachler, & Cook (2009) present further methodologies and means of analysis that are useful for this research as they stress the emergent properties of learning in mobile contexts, which characterizes much of the subsequent analytical framework presented in this thesis. Case studies are a valuable methodological model for this thesis as they provide a means of evidencing activity, but also provide a contextual environment in which to situate this activity. A particular weakness in much mobile learning research is the disaggregation of activity from context; learning objectives and assessments are often viewed as ends unto themselves rather than as emergent artifacts of a community, topology, or context. Case studies provide context along with activity, yet the rigors of the case study model itself is inappropriate as it explores individual cases at a granular level, thereby negating generalization that might occur as a result of the research (Gomm, Hammersley & Foster, 2000). A hybrid case study approach will be adopted for the purposes of this research that focuses on how individual graduate students use mobile technology to participate across multimemberships.

The "case" in this case study will not be one geographical location, but rather across multiple universities all offering formal graduate programmes in the humanities. The case is the larger set of communities that exist that govern, or structure directly or indirectly, graduate students' participation in the humanities and how their use of mobile technology influences that participation. As such, there is less focus on the dichotomies of "in school" and "outside school" that are positioned to analyze the potential of mobile learning (Seipold, Pachler, & Cook, 2009). This research assumes that the movement between informal and formal practice is consistent and that categorizing mobile activity according to one field (such as the formal disciplinary "in school" field) potentially severs that mobile activity from its generative base of activity amidst the participant's own social

topology. It is critical for this research to position learning at the individual level within a larger disciplinary, professional, and social set of communities at the nexus of multimembership, rather than at an organizational level with actors in a single activity system.

Several methodological approaches to mobile learning focus almost exclusively on design and several of these are specific to the Korean context of learning. This design approach has an applicable model in the disciplinary structure of South Korean universities, which will be discussed further in this thesis. Kwon & Lee (2010) provide an example of this type of design methodology in their study of mobile learning for English as a Second Language (ESL) study. This approach involved a preliminary literature review outlining work to date in the South Korean context, followed by a needs analysis with a collaborative group of English education and design experts, followed by the development of a mobile learning prototype. Such an approach is useful for mapping formal practice to formal outcomes in formal educational settings, a top-down approach (Pachler, Seipold & Bachmair, 2012). Such an approach is not as useful for identifying and understanding evolving practices as brought about by novel forms of technology use, mobile or otherwise. This methodology would be useful as an addendum to this thesis, where formal and informal practices in a disciplinary context had been identified, articulated, mapped, and made visible for a design intervention, but it wouldn't suffice as the primary methodology.

Sharples, Corlett, & Westmancott (2002) provide an earlier example of a design-based methodology in the development of a mobile learning resource that attempts to identify and analyze the "complex interactions between people and computer-based technology and then transform this analysis into usable, useful, and desirable socio-technological systems." This approach also works under the

assumption that a design-based intervention is the natural result of such an identification and analysis, which is not as relevant for the purposes of this research which looks to explore practice across a variety of contexts and, more importantly in how it relates to the positions of mobile learning put forth by this thesis. What Sharples, Taylor, & Vavoula (2007) provides for this thesis is a stage of data collection designed to explore how practice (what Sharples, Corlett, & Westmancott, 2002, refer to as specific activities) are currently performed in their normal contexts and how that practice is influenced by cognitive and social structures and processes. Several other design approaches provide an understanding of the scope of mobile learning methodology, but are less applicable to the focus of this research as they stress a stability, or fixed environment, that may or may not exist in the learning practices of the graduate students under observation; it is a working assumption of this thesis that disciplinary practices and learning practices in the humanities and across these multimemberships shift consistently when presented with new artifacts, tools, and understanding. Therefore, the observation of a stable system of activity is less applicable to this research than an evolving learning trajectory (Wenger, 1998).

Several other quantitative models attempt to gauge the acceptance of technological channels or the effectiveness of mobile learning environments, including Kim, Fisher, & Fraser (1999) and Lee, Yoon, & Lee (2009) in their exploration of learning environments and learners' acceptance of elearning and mobile learning, respectively. These quantitative methods employed assume a top-down approach (Pachler, Seipold & Bachmair, 2012) of an introduced practice or environment that is supported through technology and therefore fail to account for the constant movement between informal and formal practices and individualized and socialized activity. This thesis assumes that much, if not most, learning activity that takes place in the humanities occurs outside formal, top-

down models; this thesis also assumes that informal practices shape formal practices in a way that quantitative models don't sufficiently address. Therefore, quantitative methodological models, those that assume an introduced mobile environment used to support formal practice (a formal university application, for example), will not prove sufficient in answering the research questions as they do not explicitly account for informal, socialized, and individualized practices.

Kim, Sohn, & Choi's (2011) critique on the cultural differences in motivations for using social network sites between Korean and American university students provides a transition into media driven methodologies. While it still emphasizes, qualitatively, acceptance over use and evolving practice, it begins to differentiate activity in a larger environment. Namely, it proves useful to distinguish between groups within a disciplinary context and observe how gender, age, and other descriptive characteristics might impact use and practice in mobile environments. Another complementary study is Chun et al. (2008, October) study on social relations in Cyworld, a popular Korean social network, based on volume of interaction. While it does not provide a methodology that would support the research questions for this thesis (as it works with quantitative data measuring large-scale network interaction), it does provide a potential vantage point for framing a methodological approach for looking at mobile interaction in social media environments. While a large-scale social media analysis, although relevant, is outside the scope of this thesis, Chun et al. (2008) and Kim, Sohn, & Choi's (2011) studies evidence and foreground socialized practice.

Haddon & Kim (2007) conducted a study exploring the practices emerging from mobile phones and web-based social networking in South Korea. While this study focused exclusively on informal practices for communication, the methodology employed provides a model for this research study. Haddon & Kim used interviews

with four students from an English course taught by one of the researchers. Each student was interviewed twice and additional data was collected through diaries which chronicled their activities in these social networks on a timeline. The interviews proved rich for analysis, illustrating examples of emerging practice and personal approaches to social media and demonstrating areas of divergence amongst the interviewees. Haddon & Kim complemented this study with an additional qualitative study involving 30 interviews (2007). The methodology employed in this study directly references the research questions being addressed, namely the relationship of the individual to their social community, the relationship between the social community and the mobile phone in terms of new media practices, and how those practices relate to the South Korean cultural context. Such a methodology could be appropriated for the purposes of this thesis with a relatively small cohort of graduate students in the humanities being interviewed on multiple occasions and asked to provide records of their media practices supporting their disciplinary work in mobile settings. These artifacts could be used to triangulate, to some degree, the findings emerging from the data.

A methodology that furthers Haddon & Kim's approach is Goh et al. (2009)'s study on why mobile users share media in terms of motivations and information needs. The methodology mirrors Haddon & Kim's approach: participants were asked to maintain a diary for a month that documented their media sharing activities (2009). These diaries were buttressed with data collected from post-study interviews; both these data collection methods were used to identify motivational factors in media sharing. For the purposes of this thesis, it would be necessary to supplement the diary and interview approach with artifacts designed to indicate the range of compositions and media being created in mobile technology. What is emerging from these methodologies is the need for, or the methodological advantages posed by, multiple reflections on multimodal data.

Hjorth (2013) advances this critique of emergent media practices in mobile environments in South Korea through her case study approach to gender, location-based services, and camera phone practices in Seoul. Hjorth followed participants through location-based service applications and media sharing practices and how these applications and activities illustrated the relationship between gender and camera phone practices. The location-based service provides the vantage point from which to construct the methodology to identify emerging practices. Hjorth used focus groups, surveys, and in-depth interviews to collect the data. Hjorth is attempting to make visible practice that moves constantly between states of being (geographical, social, personal); this is particularly relevant to this thesis as it attempts to make visible the movement between informal and formal, individualized and socialized states of activity all commiserate with learning practices. Based on Haddon & Kim (2007), Goh et al. (2009), & Hjorth (2013), it becomes clear that in-depth interviews, along with some sort of media or compositional artifact collection, would form a significant portion of the data collection involved in this thesis' methodology.

Hjorth (2008) further advances the relationship between mobile media and emerging practice in her study on mobile media found in artistic installments; it discusses the capacity of mobile technology (specifically, the emerging practices stemming from mobile use) to blur the distinctions between creator/artist and audience, which might prove complementary to this thesis' attempt to follow the learner's movement between informal and formal, individualized and socialized states of being. Methodologically, this study implicitly emphasizes the need for artifact analysis to complement interview or observational methodologies. As such, it suggests the need for incorporating artifact analysis as a means of triangulating data collected through observations or interviews.

South Korea provides a rich context for observing emerging social practices in mobile environments and mobile media (Ok, 2011) and the methodologies employed by Hjorth, Haddon & Kim, & Goh et al. provide a useful methodological set of approaches to observing and collecting data that might answer the research questions focused on graduate student participation in the humanities as mediated by mobile technology. These studies are indicative of the "mobility turn" (Urry, 2002) in the social sciences and how the mobile phone becomes a vantage point for observing this mobility turn; while this thesis is less concerned with geographical location, it is concerned with mobility through these learning spaces, informal, formal or otherwise. Based on the Korean-specific research of Haddon & Kim (2007), Goh et al. (2009), Hjorth (2013, 2008) & Ok (2011) as well as the mobile learning work discussed earlier in Pachler, Seipold & Bachmair (2012), McAndrew, Taylor, & Clow (2010), and so forth, it becomes clear that in-depth interviews, along with mobile artifact analysis, would form a significant portion of the data collection of this thesis' methodology.

Emerging from this limited methodological review are several requirements that will be reflected in the methodology selected for this thesis, namely that it provides capacity for tracking evolving learning trajectory across formal, informal, socialized, and individualized spaces, a focus on practice rather than performative or benchmarked aspects of learning, capacity for collecting multiple forms of data, and capacity for triangulating or cohering that data.

What emerges from this discussion is the need for multiple reflections on multimodal data. As there is an attempt to track a trajectory across fields and across multimemberships, it will prove methodologically necessary to coordinate that trajectory across multiple modes of data. Based on these requirements, the

ethical position discussed earlier, my role as outside researcher, and the research questions themselves, methods have been chosen to support a qualitative study analyzing mobile use amongst graduate students in the humanities.

5.6: Research Questions

It is prudent at this point to draw attention to the research questions themselves as these will provide the foundation from which the methodology will be drawn. Some are pragmatic, establishing the range of activity taking place amidst the aforementioned social topologies and nexus of multimemberships, some are practice based and as such designed to evidence the shifting modes of participation and, subsequently, habitus, while some are aggregations that look to translate this spectrum of activity into learning trajectories. All these research questions are in search of an apt method from which to draw answers. They are the utilitarian tip of an overall research design. The research questions emerging from this exploration of the mobile technology use of graduate students in the humanities in South Korean universities are provided as follows, italicized and followed by an initial discussion, advanced further later in this chapter, for what methods would most readily answer them.

How do graduate students in higher education in the humanities in South Korea use mobile technology to support their learning practices? This question is the culmination of much of the discussion taking place thus far in this thesis as it situates several of the recurring points of focus amidst a space, the social topology of Bayne et al. (2014). It pivots on the intentionally opaque definition of "learning practice" advanced in this thesis, a method or means of engaging a particular space, community or communities which in turn generates feedback from said space or community. This 'feedback' stimulates iterated practice, conscious recognition, or even shifts in habitus and is positioned as learning.

As such, the pragmatic answering of such a question becomes a matter of identifying the range of activity taking place through mobile technology, the range of fields transversed in this activity, and to establish the structure of both the social topology and nexus of multimembership. It is not known at this stage whether what is capable of being evidenced through mobile technology will present an accurate scope of activity as presumably there are some practices and engagements that are decidedly not technologically specific. Yet, this position will prove instructive at the analytical phases of this thesis where these assumptions are tested.

What learning practices are presented in this mobile technology use? It is the working assumption of this thesis that not all of these learning practices will render as learning practices to the participant as they are tacit, not clearly understood, or even not utilized consciously as such. An example might be a socialized practice for engaging with classmates around a particular project through KakaoTalk. It is highly unlikely that the practices were overtly discussed and rehearsed, rather the habitus of the individual shifted in accordance with their structure. The graduate student adjusts to and adjusts community practice through participation and does so tacitly.

Methodologically, this presents the need for triangulation, or coherence across the data being presented. As these practices may be tacit or unconscious expressions emerging from habitus, it will be critical to surface these learning practices across modes of data, to triangulate them across the data, and to make visible the tacit, insofar as possible. A pointed question asking the graduate student to detail their learning practices will prove insufficient, but interviews exploring these learning

practices as the graduate student understands them in parallel with other forms of data collection that surface the actual practices will prove more robust.

What mobile artifacts are being produced in mobile technology in South Korean higher education in the humanities? This third research question, beyond identifying the materials emerging from these learning practices, provides utility across a few different facets. To begin, these artifacts reveal the "historical trace" of community practice "and of social structures, which constitute and reconstitute the practice over time" (Lave & Wenger, 1991, p. 58). This research learns the contours of the community of practice through the practices and the artifacts they both employ and generate; the shape of the community reveals itself through these practices and attendant artifacts. Artifacts are positioned broadly in this research study, allowing for interpretations closer to Lave & Wenger's original position of artifacts as physical, linguistic, and symbolic resources, technologies and tools, compositions and knowledge statements, and the like (p.30), along with those more aligned with mobile technology practices in South Korea: KakaoTalk exchanges, images, video, and audio generated as a result of mobile technology use across a range of multimemberships. As such, a methodology needs to account for these mobile artifacts explicitly, suggesting the need for a multimodal approach.

Does this combination of mobile technology use and learning practice suggest a learner trajectory (Wenger, 1998) in respect to the disciplinary community? If so, what shape does that trajectory take?

These final two questions, deliberately packed together, begin to cohere all of these learning practices, all of these artifacts and mobile technology use into a concerted relationship, one that suggests a relationship with a community. This question implies that these elements can be meaningfully brought together to

suggest a particular trajectory. These questions complicate the methodology by necessitating that the attendant methods account for this aggregation of use, practice, and artifact and cohere it in a meaningful way, suggesting that a narrative approach might be used to provide structure to what otherwise might surface as disparate elements.

What these questions also presuppose and necessitate is that evidence is drawn that establishes the social topologies of these students in a series of multimemberships (the broader focus), as well as the contours of the community of practice itself. Without these two elements, it will be near impossible to track a trajectory in relation to a community; both are required to account for the agency of the individual in the management of their multimemberships as well as the boundaries of the community.

These research questions also pragmatically presuppose that the data needed to answer them will ostensibly take non-textual forms, as mobile technology foregrounds multimodality (Leander & Vasudevan, 2009). This is partly to do with the technology itself, which foregrounds the potential means of multimodal communication: informally in every emoticon, in every GIF, or in every audio recording; formally through alternative narrative compositions, art installations, locative media and portfolios. To bring this multimodal element to the analytical fore, it is necessary to find a means of exposing its underlying structure as it relates to this study, to use it as a waypoint corroborated with other materials in a larger constellation of activity. It is becoming clearer to this researcher that multimodality can reveal this structure; it provides a means for identifying the salient elements of these artifacts, to surface them in a meaningful and coherent way. While our discussion of these emerging research will be returned to later in this chapter, our attention turns towards multimodality to demonstrate the utility

it might provide in transcribing evidence that speaks to the research questions themselves.

5.7: Adapting Multimodality: Rationale

In an attempt to surface artifacts that these graduate students employ across their nexus of multimembership and to honor their use of materials across modes, this thesis employs select aspects of multimodality. Multimodality, it is hoped, will allow for the identification of the salient features of the mobile media being produced through transcription. This transcription will then be used to begin the process of possibly cohering these artifacts into an overall trajectory, along with the practices used to create them. Multimodality refers to the nature of language and communication being represented through different modes. More specifically, multimodality is:

> "an interdisciplinary approach that understands communication and representation to be more than about language...Multimodal approaches have provided concepts, methods and a framework for the collection and analysis of visual, aural, embodied, and spatial aspects of interaction and environments, and the relationships between these" (Bezemer, 2012).

Multimodality is, in part, an attempt to reclaim the modes of human communication long sequestered from the more-academic elements of text and language, those of the visual, the moving image, the aural and others. Some see this process of reclamation as an academic imperative: "we, in the 'West', find ourselves singularly ill-equipped in the new landscape of communication, whether that is generally speaking, or institutional and non-institutional education (Kress, 2000). While this reclamation is not an imperative for this research, nor does this author place great stock in the capacity of the East to advantage the "ill-equipped"

West in this regard, it is a process that is being accelerated by the mobile technology itself where different forms of media and data sit alongside text as a viable communicative option.

This new landscape of communication is being accelerated by a shift towards using multiple modes in presentation and meaning-making, a shift towards the visual (Kress, 2000). While this thesis is not explicitly concerned with the semiotic role of these exchanges and ensembles, it is concerned with the broader modes of communication and representation in which these students participate through mobile technology and how these affect engagements at their nexus of multimembership and through their social topologies.

As it relates to the humanities, this shift to the visual is concurrent with long established practices. Primary sources, often non-textual, have been analyzed to produce secondary sources, almost exclusively textual. A historian combs the material artifacts of lost civilizations, investigates the primary sources as both text and media (marginalia, calligraphy, illustrations, etc.), postulates as to their purpose, and then returns to his/her social topology to write about them and circulate that writing. The transmission of knowledge produced from these artifacts has been predominantly reliant on text. Multimodality provides a transcription structure that allows for these textual and non-textual elements to be considered in one environment. This thesis explores how the multimodal data exhibited through the learning practices and mobile technology use, affects participation and, in turn, suggests a trajectory. As such, multimodality, coupled with mobile technology, is important insofar as it makes this sort of evidencing possible.

Multimodality also assumes that these materials, being grounded in a context or community development and use, are "socially shaped over time to become meaning making resources that articulate the (social, individual/affective) meanings demanded by the requirements of different communities" (Jewitt, 2009). While this evokes the semiotic focus of multimodality, it proves useful support for the articulation learning trajectories evoked by community of practice theory employed in this thesis. These materials are not just representative or utilitarian in their purpose as used for knowledge or for community engagement, they are affective and social projections of the participant and their relationship with the communities and practices being engaged. Repeated images of the same study space suggests not only the functionality of the study space as a pragmatic space documenting an engagement with a disciplinary community, it also suggests an affective relationship with the space itself. The social nature of these community resources suggests can emerging community practice in their use. Each practice employed by these graduate students consistent with community practice suggests a further orientation towards that community. The affective elements are the residue of interaction, and in some cases part of the trajectory being introduced. All of this interaction is taking place along the boundaries of community practice, at intersections of a social topology in 'constellations' (Kress, 2004). Multimodality as a means of transcription gives us a mechanism for to surfacing parallel instances of coherence across modes to begin to see the points in these constellations.

While greatly simplifying multimodality and all its semiotic complexity for the purposes of merely illustrating its potential as a means of transcription for this thesis, one particular concept has relevance and as such must be discussed. Building on modes, ensembles refer to representations or communications that consist of more than one mode, brought together not randomly but with a view to

collective and interrelated meaning. Within the framing of socially, culturally and historically regularized ways of making meaning, the communicator 'orchestrates' an ensemble (Kress, 2010) that bears traces of the maker's 'interest' (Kress, 1997) and agency (Roswell, 2012). As such, there is a meshing between cultural affordances, and the ideas and purposes of the individual, as meanings are 'sedimented' in particular ways (Roswell & Pahl, 2007). The parallels to Bourdieu's habitus are striking: affect (interest), agency, social, cultural, and historically regularized ways of meaning making, aesthetics and so forth. Ensembles, when seen as such, are the 'products' of habitus and the communities in which it is being structured.

This raises a number of analytical questions, such as which modes have been included or excluded, the function of each mode, how meanings have been distributed, whether alternative modes could have been chosen and what the communicative effect of a different choice would be. Yet, these concerns are abated in several ways in this thesis. First is the use of multimodality as transcription. Its function is merely to surface the learning materials of these graduate students. Second is the focus on coherence, whereby ensembles assist in identifying or confirming a narrative, rather than as a semiotic construct unto itself. This thesis attempts to chart coherence across a series of modes that were not deliberately brought together as ensembles by the graduate student. Their only unifying elements are related to the narrative, projected or otherwise, of the graduate student, and their participation in this research project. As such, multimodality is needed to transcribe traits from each mode of data in a way that proves useful for the evidence emerging from the narrative.

As such, ensembles are useful for this thesis insofar as they foreground the intertextuality of meaning across modes. Whether or not the relationships

between the modes of an ensemble are implicit, explicit, intentional, or accidental is secondary to their larger meaning, which in this thesis relates to their learning trajectory in relation to community participation. These ensembles are not used to deconstruct meaning from mode, but rather to construct modes to extend meaning. Multimodality, more than anything, is being employed in this thesis to transcribe traits that may or may not appear across the data.

In the South Korean context, Multimodality provides a mechanism for transcribing with some fidelity the materials emerging from the dynamic and long-standing informal mobile communities and the more recent, top-down, formal mobile learning communities. These communities conflict, but this thesis employs multimodality for a shared vernacular on which to transcribe this. This thesis is not as concerned with analyzing the alignment of multimodal material: "to show, through practical production, an understanding of the genre and its conventions, with the ultimate aim of gaining accreditation" (Burn & Parker, 2003, p.14). In the South Korean academic context, this "aim of gaining accreditation" was not believed to be overtly present as it was expected that these students would draw more from overriding South Korean sociocultural practice than a desire to demonstrate their understanding and alignment with the communities in which they interact. In the South Korean context, accreditation is assumed to be filtered through a complex sociocultural layer of activity and acceptance.

In the South Korean context, however, the materials being produced by these graduate students in mobile technology are rarely submitted for assessment in the formal academic community. Rather they serve to provide an *impression* of learning for the individual student or for the learning community that the student has assembled around them: a comment in KakaoTalk, a photograph used to orient the unfamiliar, a video used to document a social interaction, a photograph

to use as a memory aid, etc. They structure a topology in which disciplinary participation *might* take place, rather than evidence of an alignment with the practices consistent with a community of practice, or even with direct community engagement. Yet impressions are part of the trajectory *towards* community participation; they are potentially preparatory steps towards engagement. Multimodality provides a means of surfacing and transcribing these impressions. Now it is necessary to cohere these transcriptions into trajectories.

5.8: Charting Coherence in the Mobile

Ultimately, this thesis is concerned with coherence, or how the collected data 'speaks' to one another to present an overall trajectory in relation to community participation. This idea of coherence is an attempt to determine if the graduate student is projecting a consistency across their data in relation to community participation that might then suggest a learning trajectory.

Coherence as positioned in this thesis is drawn partly from narrative analysis, particularly the work of Bruner (1991) and his belief that narratives provide us both evidence and agency in the construction of identity. It looks to position particular activities as forms of intentional state entailment; it validates much of the activity seen in the data as more than merely accidental or unintentional, but rather as a wish fulfillment, or an affective expression of agency. These graduate students act according to a belief or desire or value. Narratives are about people acting in a particular context; the key analytically is to determine which context or community is guiding that activity. Pragmatically, a narrative approach also provides a narrative diachronicity (Bruner, 1991), or a sequencing of events in time whereby "knowledge and practice are studied as local knowledge and practices" (Geertz, 1983). The narrative provides a scaffold of intent, affect, and activity on

which to position and to corroborate the transcriptions emerging from the multimodal data.

Without the narrative, this thesis is reduced to positivist critiques of community dictating or strongly suggesting the contours of individual activity. With the narrative, this thesis may position intent and agency as a prime driver of trajectory as the participant will have identified, possibly, their own end-point of the trajectory (I want to be an academic or I want to be a mobile designer, for example). Thereby, the narrative becomes a form of intentional state entailment by reaffirming this end-point or suggesting how it might be achieved. The transcribed artifacts become a means of cohering the trajectory emerging from that narrative.

This use of narrative to at least partly establish coherence is not an explicit adherence to linguistic or textual criticism, nor an overt attempt to demonstrate how "systematic attention to language can reveal about the narratives themselves, their tellers" and to their intended audiences (Toolan, 2012). What narrative provides in this thesis is the structure from which coherence can be observed: the narrative diachronicity, the intentional state entailment, the suggestion of a wish to be fulfilled. It is used not as a means of charting linguistic meaning between texts, but as a means of charting consistency of the graduate students' narration across modes towards an overall learning trajectory.

Narrative analysis does not hold the exclusive purview of coherence as positioned in this thesis; again, multimodality is being adapted to suit the needs of this thesis. In multimodality, coherence is the "effect of arrangements such that everything in the arrangement gives the appearance of 'naturally' coming together" that suggest "textual completeness" (Jewitt, 2012a). For the purposes of

this thesis, generating an organic structure is secondary to consistency; this thesis is less concerned with the aptness or fidelity of how ensembles work together, but rather with the consistency of the meaning presented across the social topology.

What is more instructive for coherence in this thesis is van Leeuwen's (2005) positioning of information linking, or how temporal or causal links are established between elements in multimodal texts. This thesis is most concerned with coherence as it involves information linking *across* the data. Further inspiration for coherence was drawn from Monaco's (2009) discussion of parallel and contrapuntal sound (in Rose, 2012) in relation to imagery. "Parallel sound is sound that is actual, synchronous with and related to the image. In contrast, contrapuntal sound is commentative, asynchronous and opposes the image" (2009). It allows this thesis to demonstrate when themes emerging from one mode of data are cohering or contradicting others.

These linked materials cohere so as to chart activity across the informal, formal, individualized, and socialized (Park, 2011), across the interactional context (Dourish, 2004) and habitus transformation (Kress & Pachler, 2007) that might occur there, across the spectrum of the social topology in which these students participate. Where these strands of coherence congeal is amidst the nexus of multimembership in which these graduate students participate. This nexus of multimembership, the simultaneous membership in different groups, is problematic and produces tensions involved in their reconciliation, but this thesis is structured to consider multimemberships an inevitability, particularly in the South Korean context where its attendant constructs are the norm: hierarchical close-knit groups across several discrete facets of society, hyper-connectiveness made possible through mobile technology and social media, and retraditionalized practice. Narratives provide the structure of intent, agency, and identity, while the

artifacts provide evidence of practice and begin to structure coherence in relation to narrative.

5.9: Methods Emerging from the Literature Review: The Case for this Thesis

As the necessity of narrative and multimodal data to begin to address the research questions is foregrounded, the necessity of employing a mixed methods approach becomes clear. As this thesis is primarily concerned with establishing learning trajectory as framed by mobile technology, and as learning trajectory is the aggregation of a variety of artifacts, activities, practices, intentional state entailments, and other informative narrative and community elements, then it stands to reason that the methodology employed for this thesis ascribes to the requirements as discussed earlier in this chapter, requirements that are now corresponded to a method:

Capacity for tracking evolving learning trajectory across formal, informal, socialized, and individualized spaces: In order to track this learning trajectory, it must first establish its respective spaces and constructs. It must generate data that identifies the memberships involved, identifies the relationship of the individual with these memberships, and begins to identify the learning practices being suggested. As such, the necessity of narrative data drawn from an interview is the most direct and apt method.

A focus on practice rather than performative or benchmarked aspects of learning: As this thesis attempts to chart trajectory rather than influence its performance or build upon a particular formal learning outcome, it must establish a broad enough learning space to account for practices that migrate between communities. While this is less a method rather than a methodological consideration, interviews that allow for participants to establish their own learning spaces is methodologically

apt. This suggests the need for semi-structured or open method of interviewing, one that allows for holistic narrative presentations and "the free associations that interviees make" (Hollway & Jefferson, 2008, p. 296). Such a method retains the capacity for accounting for formal learning outcomes but only as they are positioned in the participant's narrative presentation; if raised by the participant, some level of importance can be deduced from them.

Capacity for collecting multiple forms of data & capacity for triangulating or cohering that data:

As mobile technology allows for multimodal communication and as such communication has been well placed within, at least, the informal mobile communities in South Korea discussed in previous chapters of this work, then it is methodologically necessary to account for this multimodal activity. This is not an attempt to supplant text in the interests of a greater shift to the visual (Kress, 2000), but rather to maintain fidelity to the lived-worlds of the participants themselves. The capacity for cohering such data is provided through the transcription method employed, one that emerges from multimodality. Yet coherence isn't exclusive to the multimodal data. Impressions or themes drawn from the narrative interview itself require cohering. As such, it becomes clear that a secondary method must be employed to corroborate findings from the narrative initially presented.

Based on these requirements, the following methods are proposed which speak to the overall methodology involved in observing and analyzing the learning trajectories involved in the social topologies of mobile technology users in the South Korean context.

5.9.1: Narrative Interviews

To coherently gauge this participation and the movements of these graduate students, it is important to provide the participants a voice for establishing their identity amidst this activity. This research does not presuppose a particular a level of receptiveness to or use of mobile technology, or a particular relationship with a particular community or communities, but rather attempts to gauge that based on the individual interviews and subsequent analysis. The narrative interviews are designed to identify the uses, learning practices, and artifacts that graduate students encounter as they move through learning structured by mobile technology. They also are designed to let data emerge from the transcripts that might demonstrate the mitigating circumstances that affect participation in the humanities, or indeed any of the multimemberships presumed to be present, and chart this collection of activity into a learning trajectory. The narrative interview builds on the "narrative turn" in social science research and provides an accessible model in oral narratives and life histories (Chase, 2005), models with which these graduate students would be familiar. Functionally, the interviews are constructed to satisfy these three conditions for the purposes of this research:

1. "The primary orientation is to provide the interviewees with the scope to tell their story...
2. Concrete, structuring, or thematically deepening interventions in the interview are postponed until its final part in which the interviewer may take up topics broached before and ask more direct questions…
3. The generative narrative question serves not only to stimulate the production of a narrative, but also to focus the narrative on the topical area and the period of the biography with which the interview is concerned." (Flick, 2009, p. 197)

In meeting these requirements, and to provide a sufficiently broad narrative in which to then coordinate the multimodal data emerging from this thesis, it is believed that the narrative interviews will require sufficient time, interventions that are postponed to the end of the interview, and a focus on the subject matter under investigation in this thesis. The intervention condition suggested an additional data collection method for this thesis, one that positioned the intervention at a later stage of the data collection process.

These narrative interviews were designed to begin with a "generative narrative question" (Riemann & Schütze, 1987, p. 353), a question that is topical and is designed to stimulate the main narrative. This thesis opted for a generative narrative question that outlined the average day of the graduate student and their use of mobile technology in an attempt to foreground both the mobile technology and to broaden the scope of learning beyond the formal; while the context of the interview situated formal learning in the foreground, the explicit questions and probes did not actively reinforce that formality. This generative narrative question is broad enough to capture the breadth of activity but focused on the “experiential domain to be taken up as a central theme” (Flick, 2009, p. 178).

This is followed by narrative probing, as needed, of the participant to determine the scope of their multimemberships, their affinities and allegiances towards particular communities, and activity across the informal, formal, individualized, and socialized fields. Specific questions were designed to determine engagements with their disciplinary community, how those engagements were managed, and how mobile technology was, if applicable, used to manage these activities.

The last stage of the interview was designed to be the “balancing phase”, in which participants are asked to theoretically account for their narrative, deducing its meaning and its relevance to their ongoing engagements in their social

topologies, and how that might change as a result of their participation in this research. This balancing phase allows the participant the opportunity to review their narrative and to provide an organizing logic or theoretical logic to it, thereby "reducing the meaning of the whole to its common demoninator" (Flick, 2009, p. 184 referencing Hermanns, 1995, p. 184). Ultimately, these narratives are topical "narratives of the self" (Erstad et al., 2009) or "life histories" (Flick, 2009, p. 178) pivoting on the topical elements of mobile technology use for learning in particular contexts. The narrative becomes necessary with such research questions and potentially disparate data points as "narrativization is a key means of stitching a life trajectory across time" (Leander, Phillips & Taylor, 2010, p. 342). Without the narrative, the research presented in this thesis lacks a unifying structure.

There are constraints in such an approach. Firstly, is the types of analysis that emerge as a result: thematic, structural, dialogic/performance, and visual (Riessman, 2008). This thesis will primarily employ thematic analysis as it most readily aligns with the research questions being asked (designed as they are to account for activity and categorizations of that activity), but there are constraints in terms of "what is presented in a narrative is constructed in a specific form during the process of narrating, and memories of earlier events may be influenced by the situation in which they are told" (Flick, 2009, p. 184). As such, the researcher is dependent on the narrative being told, rather than the accuracy of the details used in the telling. The narrative interview was constructed specifically to allow the participants to guide the discussion and to compose narratives of meaning based on experiences with mobile technology.

A less rigid, probe-based interview format was deemed necessary to elicit emotional context, a context that would help establish trust in the interview process as well as authenticity in the responses. The interview schedule was specifically constructed to avoid rigidity; rigid question construction dictates

"acceptable" responses (Mishler, 1986, p. 49). "Respondents, for their part, learned during the interview how to answer adequately, but briefly" (1986, p. 49). It is the assumption of this research, that the context of meaning making that informs the participation of these graduate students in the humanities and throughout their multimemberships can only be naturally broached through open-ended questions and a relinquishing of authoritative control on the part of the interviewer.

A potentially mitigating factor in using this narrative approach is the South Korean context, namely how the authority embedded in the interviewer and interviewee relationship will affect responses or possibly stunt the construction of individual narratives. It is important to establish an appropriate context for these interviews to take place, one where the graduate student feels empowered to establish their narrative. One such method for empowering graduate student participants would be to use peers as interviewers; the peer interview approach has been useful in particular circumstances where complexity might otherwise stunt an authority/teacher-led discussion (Hamilton, 1996). Such an approach was adopted for this thesis.

5.9.2: Mobile Artifacts

Building on the narrative interview are the multimodal data points that are being suggested by the research questions, particularly what mobile artifacts are being produced and what learning practices exist therein in the scope of the activity of these graduate students. There was a need for presenting data that both documented the types of mobile communication occurring in this context, and data that challenged or reinforced themes emerging from the interviews. This use of the multimodal data is a means of establishing a measure of coherence across the data types by determining whether the themes found in the interview are merely constructions of the interview itself, or whether they have some parallel across modes. Further was the goal of maintaining fidelity to the practices

evidenced by these graduate students in their lived worlds, where activity is managed, partly, through mobile technology.

The term artifact is employed for this thesis as it most readily aligns with both the literature in mobile learning (particularly Park, 2011 and Sharples, Taylor, & Vavoula, 2007) and community of practice theory (Lave & Wenger, 1991; Wenger, 1998 and Wenger, 2014), as opposed to multimodality's tangential "semiotic resources" (van Leeuwen, 2005, p. 285). These mobile artifacts were defined as being any media generated or mediated in mobile technology (annotations, text messages, images, video, audio recordings, etc.) that represent or structure learning. These graduate students would be asked to submit any media they use to learn or participate in their discipline or multimemberships, any media that represents or documents their learning practices, or any media that suggests how they learn or prepare to learn. Instructions would not specify acceptable formats, lengths, or scope of these artifacts, but did mention the possible range of media that the mobile technologies could generate. These artifacts collected would be analyzed to determine what is being produced in mobile technology in or peripherally to the humanities, informally or formally, and whether these artifacts might be classified as informal, formal, individualized, and socialized (Park, 2011). These artifacts were transcribed and analyzed to indicate what practices are made visible through their production.

What these artifacts are

The purpose that necessitated these artifacts is twofold. First, these mobile artifacts attempt to evidence the position of mobile learning advanced in this, that of learning across multiple interactional contexts (Dourish, 2004), amongst people and interactive technologies (Sharples et al, 2007), across public and private processes (2007), and through cognitive transformation (Kress & Pachler, 2007).

Most importantly, however, is that these mobile artifacts are evidencing learners "artfully" engaging "with their surroundings to create impromptu sites of learning" (Sharples, Taylor, & Vavoula, 2007). This researcher expected to see 'artful' engagements at park benches, through whispers and keystrokes in coffee shops, at peer meetings for group projects being evidenced through imagery, ambient audio, and video recordings, respectively. So to begin, the mobile artifacts are the objects that congeal, or, to use Wenger's own terminology, reify (1998, p. 58) the graduate student's own experience into material form. They give form to the themes of participation and mobile technology use espoused in the narrative interview. These artifacts are both the legacy containers of certain community practices (p. 55), but also the beginnings of coherence if they are aligned with themes emerging from the interview. As a graduate student details the importance of a particular application to their learning practices yet fails to present evidence of said application in their mobile artifacts, then this incoherency is instructive. So, the mobile artifacts serve the pragmatic purpose of providing data to begin to triangulate, or cohere, what is emerging from the narrative interviews. They are the most granular units of transcription and analysis in this thesis.

Further, these mobile artifacts are attempting to evidence mobile technology's role in the larger communication and learning structure at work amongst these graduate students in South Korea. This thesis is concerned with the role of mobile technology in not only evidencing these communication and learning practices, but observing how mobile technology structures them. Preliminary background has been provided in previous chapters that begins to position mobile technology, but it is important to note that this process doesn't end with KakaoTalk; it extends throughout the mobile environment evidenced through these mobile artifacts. Further, these mobile artifacts are designed to incorporate the materials of communication and learning as they exist *in situ*, rather than adapt them solely to

the textual medium. Mobile learners communicating across the multimodal spectrum is a well-established practice, discussed earlier in this thesis in relation to the South Korean informal context. Mobile artifacts attempt to make visible the complexity of the role of mobile media and intertextuality.

This thesis is designed to follow practices and meaning-making across media, not to stop at the edge of the single mode: text, visual, audio, or otherwise. This thesis is designed not to isolate a particular mode, but rather see the spectrum of multimodal data as artifacts in a larger learning enterprise. These mobile artifacts are most certainly tools in the process of coming to know (Saljo, 1999) and how they cohere or their intertextual relationships in the larger nexus of multimemberships suggests trajectory. While not a semiotic research study, it would be unwise of this research to not consider this communicative process altogether. These mobile artifacts, along with the interviews and reflective prompts, are communicating movement.

What these artifacts aren't

It is important to note as well what these mobile artifacts are not. For the purposes of this thesis, these mobile artifacts are being treated as *artifacts*, hence the use of multimodality as transcription tool, and not *live acts*, hence the avoidance of Multimodal Interactional Analysis (Norris, 2004). The mobile artifacts generated by this method are a mix of both generated and retrieved media. Some participants would presumably submit media they created specifically for this research project, some would retrieve media they had already created, and some were expected to be a combination of both. As such, they weren't live acts, nor exclusively interactional. They all existed however as artifacts of engagement in learning practices. They all documented or illustrated a particular learning

practice or activity across the informal, formal, individualized, and socialized spectrum (Park, 2011).

While limiting specific modes of inquiry, this emphasis on artifacts over live acts is both pragmatic and generative. As direct ethnographic or autoethnographic participation in these communities was deemed ethically irresponsible (in relation to the dual roles outlined in Point 12 of BERA's Ethical Guidelines, 2011), functionally impossible (language, cultural, and age-based hierarchies in the South Korean context would, effectively, bar my entry into these communities), and methodologically unfeasible (if entered, my presence as researcher and professor, unless anonymized, would structure the activity taking place there), this research is wholly reliant on data collected and submitted by the graduate students. Yet, this is generative insofar as narrative coherence is concerned.

The data collection being proposed for this research ensured that these graduate students cohered their own narratives of participation and learning across several modes of data making a potential learning trajectory emerging from that coherence a more tenable analytical construct. This research is not reliant on the researcher's prowess for deciphering their own motivation or bias (as would be the case with autoethnography) or the motivations, biases, and activity emerging from the observed community (as would be the case with an ethnographic approach). Rather, this research relies on the graduate student to present their own narrative of learning across communities and through mobile technology across modes.

5.9.3 Reflective Prompts

Establishing coherence across two data points while instructive would ultimately prove inconclusive. The findings and potential trajectories emerging from these two data points, even if cohered, would fail to have predictive capacity. Rather

than remain in the implicit, the third data point attempts to return to the "balancing phase" of the narrative interview to both deduce and confirm the meaning of the trajectory being presented across the data. The trajectory being gleaned from the first two data points would be explicitly confirmed by the participant themselves. Beyond checking the validity of the coherence and trajectories suggested in the data, these reflective prompts can be used to elicit further detail that would further help corroborate the findings.

These reflections will be requested from the participating graduate students in KakaoTalk and will be attempts to gauge narratives emerging from the data, mobile technology use, learning engagements in multimemberships. This data will be analyzed in conjunction with the narrative interview transcripts and the submitted artifacts in an attempt to extract answers to the research questions of how mobile technology is being used by graduate students in the humanities, what is being produced there and through what practices, and how this might suggest an overall learning trajectory.

Please note that these prompts would need to be customized for each participant according to the data they provided in the first two data collection methods. They will be crafted based on the initial analysis of the interview data and the mobile artifacts that determines their coherency. The prompts are then designed to triangulate the themes emerging from the interview and artifacts, to allow the graduate student the opportunity to reflect on their answers and their submitted data, and speak more explicitly as to how these artifacts and interview data were representative of their disciplinary or community engagement or learning practices.

This participant self-reflection is grounded in the work of Sengers et al. (2005) on reflective design in computing on surfacing unconscious values embedded in the technology itself, which proves applicable to this research as it is attempting to situate mobile technology within the larger social topology of the graduate student. Verpoorten, Westera, & Specht's work (2012) on reflective triggers, the deliberate prompting approaches that offer learners structured opportunities to examine and evaluate their own learning, has proven instructive as well for framing these reflective prompts. Reflective triggers were applied to an online learning course and results suggested their impact on the learning taking place on the course; pragmatically, this research provides discussion around using the reflective prompts at intervals throughout the course or upon conclusion. This thesis opts for the latter to avoid "flow breaking" or the potentially disruptive influence of the reflective prompt on the activity at hand (2012, p.9). Ifenthaler's (2012) work on reflective prompts reinforces the necessity of these reflective activities on learning overall.

The reflective prompts are essentially a culminating reflective trigger inserted as a bookend to the research study. They provide an opportunity for the participant to make conscious (for both the researcher and themselves) the learning practices they currently employ to make meaning and how these practices inform their participation across their multimemberships and, in particular, their discipline. These reflective prompts or triggers have been used in research studies involving technologically-mediated learning, including Verpoorten, Westera, & Specht's work (2012) in their study of reflection in online courses, Holland & Purnell (2012) in their study of reflective prompts with students of information systems, and Pan & Dominguese (2012, March) work on digital storytelling for reflection.

Reflective prompts of this sort align with community of practice theory, particularly as it applies to reification as "the products of reification are not simply concrete, material objects. Rather, they are reflections of these practices, tokens of vast expanses of human meanings" (Wenger, 1998 p. 61). These reflective prompts are evidence, along with the more material mobile artifacts, of the learning practices themselves, evidence of the trajectories suggested by their use and reification. Reflective prompts are a means of surfacing all of this in the research proposed in this thesis.

Jointly, these three data points constitute an approximation of, not an adherence to, the methods of a case study approach, one scattered across multiple institutions and several intersecting communities. They also employ methods in keeping with an ethnographic approach, but remain sensitive to the particular South Korean context in which embedding the researcher as member of the community would be logistically problematic.

5.10: How these methods will answer my research questions

These three methods respond directly to the research questions being asked, are consistent with and applicable to the community of practice theory being employed, and maintain fidelity to the lived world of the South Korean graduate student participants in their use of mobile technology. As such, the research questions are presented to discuss how these methods will answer these research questions.

How do graduate students in higher education in the humanities in South Korea use mobile technology to support their learning practices? This question, as it situates several of the recurring points of focus amidst the social topology of Bayne et al. (2014), is potentially answered through the data collected from all three methods.

Particularly, however, are the first two methods as the narrative interview will produce thematic evidence of the use of mobile technology and the mobile artifacts will reify (Wenger, 1998, p. 58) those themes. If they fail to do so, the lack of coherence might prove instructive as a means of identifying an outbound or boundary trajectory in relation to a particular community.

As discussed, this question pivots on the intentionally opaque definition of "learning practice" advanced in this thesis, a method or means of engaging a particular space, community or communities which in turn generates feedback from said space or community. As this 'feedback', which can take the form of iterated practices, conscious recognition, or even shifts in habitus, it is critical to allow the participant the opportunity to establish their own positioning of learning practice, an opportunity provided by the narrative interview format. Without this methodological flexibility, much of this research would be reduced to formal learning practices amidst a formal learning environment, a reduction that while prevalent in the literature is being avoided for this thesis.

What learning practices are presented in this mobile technology use? These learning practices remain opaque if a methodological structure is not in place to surface them. As it is the working assumption of this thesis that not all of these learning practices will render as learning practices to the participant (particularly as they are tacit, unconscious, or idiosyncratic expressions), it will be critical to triangulate any emerging learning practice across the modes of data. The reflective prompts in particular provide a safeguard in this respect by providing an opportunity to surface these learning practices and check their validity with the participant. These learning practices are further reinforced by the mobile technology foregrounded in the data collection: the mobile artifacts generated through mobile technology and the reflective prompts. Both foreground the specific

practices associated with these environments that a narrative interview alone would fail to provide.

What mobile artifacts are being produced in mobile technology in South Korean higher education in the humanities? This third research question is directly addressed in the second data collection method: the mobile artifacts. Yet even this requires triangulation with data emerging from other methods, particularly in how the participant views these artifacts as "emerging from" the humanities, South Korean universities, or formal education. This triangulation occurs in both the narrative interview, which seeks to establish the relationship of the individual and their disciplinary community, and the reflective prompts, which seek to review the presentation of the mobile artifact as related to the disciplinary community in the narrative of the participant.

Does this combination of mobile technology use and learning practice suggest a learner trajectory (Wenger, 1998) in respect to the disciplinary community? If so, what shape does that trajectory take?

These final two questions require the narrative interview, the mobile artifacts, and the reflective prompts to cohere all of these learning practices, all of these artifacts and mobile technology use into a concerted relationship, one that suggests a relationship with a community. As said before, this question suggests, even structurally imposes, the notion that these elements can be meaningfully brought together to suggest a particular trajectory, thus requiring the concerted effort of all three methods.

The methods employed in this thesis foreground a trajectory being projected by the participant themselves; this research is analytically reliant on their projection of narrative, their curation of mobile artifacts, and their reflective prompts to

determine the shape and structure of these trajectories. Such an approach has limitations, particularly in the validity of what is being projected; "It is always only 'the story of that can be narrated, not a state or an always recurring routine" (Hermanns 1995, p. 183.) Yet these limitations are negated by the research questions themselves with their focus on trajectories "in relation to a disciplinary community" rather than "within a community." There is less need to corroborate the authenticity of the practices being evidenced as they relate to community practice, less need to address the complications arising from the tacit or contested elements of community practice, as full or authentic memberships isn't expected. This research is concerned with the relation of the individual and the community and as such the three methods described in this chapter account for that relationship. Now that there has been discussion on the intersection of methodology, theory, and the research questions advanced in this thesis, this chapter now discusses the research design itself.

5.11: Research Design and Methodology

The population for the studies in this thesis comprises graduate students in the humanities in South Korean universities. Cohen, Manion & Morrison (2007) argue that the quality of a research is not only determined by the appropriateness of methodologies and instruments applied, but with the suitability of the sampling strategy that has been adopted by the researcher. As the theory applied to this study is community of practice theory, and in particular learning trajectories, the sample would therefore need to be associated somehow with the disciplinary community in the humanities. As the research sample was selected to involve graduate students from different humanities programmes over several universities in the Seoul metropolitan area, participants were chosen not based on any perceived or assessed technological skill with mobile technology, but rather based

on their majors and their level of education. In fact, use of mobile technology did not factor into the sampling strategy.

The sampling strategy itself was purposive in that the selection of critical cases (Flick, 2009, p. 122) proved necessary as it was related to a specific disciplinary community; while the thesis does not assume that the disciplinary community holds sway over the individual in a proportion greater than their other multimemberships, some peripheral participation in the community is a requirement for the sample. As such, the sample is comprised of graduate students actively enrolled in a formal humanities programme in a university in South Korea. Yet, the sample itself conforms to aspects of convenience sampling (Curtis, 2015), or allowing participation by those who meet the requirements of this critical case and who are willing to participate. So beyond this initial prerequisite of involvement in the disciplinary community as a graduate student, the sampling strategy welcomed participation by all. Yet, the sampling strategy also consciously limited the sample to select universities in Seoul by posting notices about the research study only on their message boards and bulletin boards on these select campuses. The graduate students themselves were selected based on their willingness to participate from either an open call for participation.

The universities in which the graduate students study are considered elite institutions to some degree. These universities were chosen specifically for the rigor of their humanities programmes, rather than for any initiative, programme, or general tendency towards using mobile technology in their instruction. Eight graduate students enrolled in formal graduate programmes in the humanities spanning two universities were chosen for the pilot study; twenty-five participants enrolled in formal graduate programmes in the humanities spanning five universities were chosen for the main research study. Please note that there was

no overlap in the universities participating in the pilot and the main research study; as such, this thesis in total spans seven universities in the Seoul area. This scattering of institutions is intentional; the research questions are concerned with the use of mobile technology for learning, the kinds of learning and practices being emerging through mobile technology, and the types of trajectories being evidenced. Answering these questions suggested the need for a broad sample across several organizations to fully determine the range of learning practices and mobile technology uses, rather than the idiosyncratic practices of one institution.

Once selected, the participant reviewed the information sheet about the project and consent was provided; both of these forms are provided in the appendix. It is important to note at this stage that the execution of the pilot project facilitated an iteration to this process. For most of the pilot project, the author employed a translator for executing the data collection. This translator was a graduate student herself at the university where the author was employed; during the interviews, the author would sit with the translator and the graduate student participant, receive an ongoing translation, and ask prompts accordingly. However, this proved unwieldy and altogether disruptive to the narrative being pursued. As such, a necessary iteration was to remove the researcher from this process. By allowing the translator to execute the data collection, herself a graduate student enrolled in a formal humanities programme, it allowed a peer dynamic to emerge during the course of the narrative interviews. This peer dynamic will, ideally, lead to a degree of authenticity which helps elicit the autobiographical-self, how the participant wants to position themselves in terms of their use of mobile technology and their participation in the humanities (Riessman, 2008). Since both the interviewer and the participant are "active participants who jointly construct narrative and meaning" (Riessman, 2008, p. 23), it was analytically prudent to establish a peer dynamic to allow for understandings to emerge in an appropriate

South Korean context. This will be discussed further in this thesis within the studies themselves.

The timeline for completion of the pilot and main study was broken into steps as outlined below:

Pilot Study

1. Identification, contact, and scheduling of participants for interviews (May-August, 2013)
2. Execution of interviews (October, 2013-March, 2014)
3. Transcription and translation of interview data (October, 2013-March 2014)
4. Mobile artifacts data collection and analysis (October, 2013-March, 2014)
5. Reflective prompts (November, 2013-March, 2014)
6. Pilot study research written as chapter with section on evaluation of research questions and methodologies in light of evidence collected (March-April, 2014)

Main Study

7. Adjustments to research design made as a result to the pilot (March-April 2014)
8. Identification, contact, and scheduling of participants for interviews (March 2014-April 2014)
9. Execution of interviews (April 2014-June, 2014)
10. Transcription and translation of interview data (April, 2014-June 2014)
11. Mobile artifacts data collection and analysis (May, 2014-August, 2014)
12. Reflective prompts (August 2014-September, 2014)
13. Main study research written as chapter with section on evaluation of research questions and methodologies in light of evidence collected (September, 2014-March, 2015)

5.12: Phase 1 and Phase 2 Workflow

This methodology, presented as a means of charting consistency of the graduate students' narration across modes towards an overall learning trajectory, requires interpretation. A trajectory drawn from the data by this researcher might not ascribe to the intent of the graduate student. While this misalignment might prove instructive analytically as an incomplete cycle of reification (Wenger, 1998, p. 58), for example, it ultimately might fail to capture the learning trajectory on which the graduate student is or believes themselves to be. As such, a mechanism for corroborating trajectories being drawn from the data is needed. This was done structurally by separating the three methods into two phases of activity.

Phase	**Method**	**Output**
Phase 1	Interviews, Artifacts	Initial analysis of data led to the crafting of reflective prompts
Phase 2	Reflective Prompts	Answers to prompts triangulated findings emerging from Phase 1

Table 4: Phases of Analysis

The data from Phase 1 was subjected to an initial coding and analysis to identify emerging themes and trajectory; the interviews would provide the core narrative, along with details that the graduate student felt necessary. The mobile artifacts would be used to evidence elements of the narrative with a focus on coherence. The themes emerging from this phase of analysis would then be used to initiate Phase 2. Phase 2 involved answering individualized reflective prompts to confirm,

refine, or repudiate these themes, returning again to coherence. These prompts were drafted upon completion of Phase 1, only after the interview data had been coded, the mobile artifacts had been transcribed, and an initial analysis had been performed. The reflective prompts were ostensibly designed to test the validity of the trajectories emerging from the Phase 1 data. Yet they also served to provide an opportunity to elicit further information from the participant; the narrative, in this approach, becomes a revisionary document and an ongoing attempt at "textual completeness" (Jewitt, 2012a). As they were direct responses to the data, each set of reflective prompts was different. All of these prompts spoke to what the participant was projecting, how it was interpreted by this researcher, and whether or not they felt their narrative was being properly presented.

Before moving into the transcription process itself, the overall data collected from this sample of eight participants for the pilot study and twenty-five participants for the main study produced the following amount of data:

	Participants	**Interviews (pages)**	**Images**	**Videos**	**Audio Recordings**	**Prompts (pages)**	**Number of Universities**
Pilot Study	8	57	45	8	7	10	2
Main Study	25	182	102	21	15	22	5
Total	33	239	147	29	22	32	7

Table 5: Total Data Collected

5.13: Interviews, Data Transcription Tools, and the Beginnings of Notes

The narrative interview involved a focus on a limited number of defined areas (use of mobile technology, use and creation of mobile media, and participation) through which the discussion could cycle. Each of these defined areas was accompanied by discussion questions and further prompts, to be used if needed. The participant was free to pursue any point of inquiry to their satisfaction. The interview was constructed to allow the participants to guide the discussion and to compose narratives of meaning based on experiences with mobile technology and their association with the humanities and their other communities of participation. Each of the interviews lasted an hour or more.

The narrative interviews were dictated and translated before being further transcribed and coded in Dedoose, a qualitative analysis software tool. Dedoose was also used to transcribe the video and audio data. Dedoose is a cloud-based tool that allows for coding, annotation, and visualization of data including text, audio, and video. In Dedoose, this data was two-step password protected and encrypted to maintain the privacy of the participants.

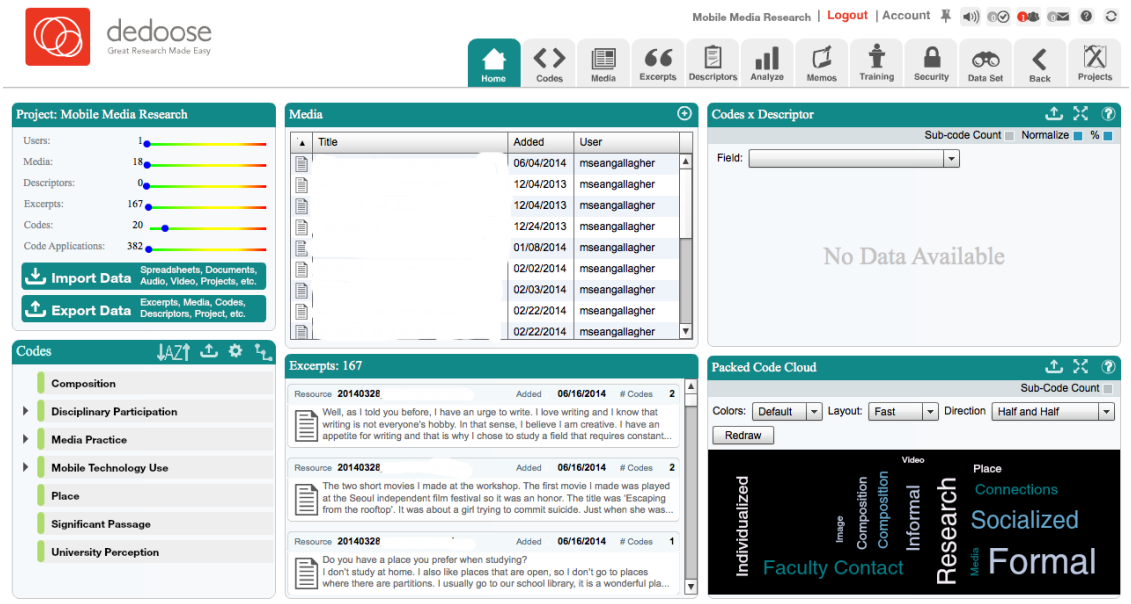


Figure 4: Dedoose Home Screen

5.14: From Notes to Codes

In keeping with the belief that qualitative analysis is "the search for patterns in data and for ideas that help explain why those patterns are there in the first place" (Bernard, 2011, in Saldaña, 2012 p. 338), the data was read through several times before any tentative labels were developed to describe pertinent pieces of data. Notes were taken, passages were identified that appeared significant, and the data was marked without any formal labels being applied.

This was essentially a hybridized form of open coding, or what Saldaña (2012) refers to as initial coding. This was not specifically in vivo coding as the emerging codes were not derived from the words used by the participants' themselves, but rather were created by the author. It was from this initial open coding that codes began to appear; however, this was not a completely open, emergent process as might be seen in grounded theory (Glaser & Strauss, 2009). The basis for this initial open coding was the research questions for the overall study. The data was transcribed according to its capacity for answering, providing relevance to, or

contradicting the research questions. As such, a transcription structure was loosely in place before the initial read of the data.

This gives credence to Saldaña's (2012) claim, from Corbin & Strauss, (2008, p. 55), that theory drives the initial, or open, coding process itself. In this research, theory, particularly aspects community of practice theory and learning trajectories, which are distilled into the research questions, which in turn structured the data collection process, and subsequently informed this initial open coding. This acknowledgment that existing theory drove the "entire research enterprise" does not mitigate the accuracy of the notes and subsequent codes employed in this study, but rather draws attention to the fact that pure data objectivity is untenable in this structure. The codes presented below demonstrate qualities consistent with both *a priori*, or predetermined base on theory; and *in vivo*, or codes emergent in nature. Having these two contested qualities within the same data is to be expected in this research. What emerged from this open coding were broad labels related strictly to the research questions.

Open Codes
Mobile Technology Use
Disciplinary Participation
Learning Practices
Orphan (passages of significance falling outside these three broad groupings)

Table 6: Open Codes

From this open coding, the data was reviewed once more to identify attributes within these broader categories that might prove significant for later analysis, an extension of open coding as it involved a further articulation of the open codes gleaned from the data and their relevance to the research questions. This secondary round of open codes was developed merely as labels, or individual attributes (Attribute or Descriptive coding), within the larger codes. They were developed as functional expressions of the data being analyzed. However, it would be erroneous to suggest that these attributes were not theoretically or analytically grounded. For example, the categorizations of mobile technology use include the categories as adapted from Park (2011), a work that influenced the articulation of the research questions. It is also important to note that several of the attribute codes presented below were dropped in further iterations of these codes and categories; they are presented below for the sake of transparency in the coding process.

Initial or Open Code	**Open Code Attributes**
Mobile Technology Use	Informal Mobile Use; Socialized; Media Creation & Composition; Research (formal or informal); Orientation and Navigation
Disciplinary Participation	Individualized; Formal; Informal; Socialized; Faculty Contact

Learning & Media Practices	Audio; Image, Video, Text
Orphan Codes	Place/Space; Subversion (participant choosing to reject or subvert a community practice); Significant Passages; University Perception

Table 7: Open Codes and Attributes

At this stage of the coding process, several orphan codes began to reveal themselves through consistency in the data. What was remarkable was their presence outside the scope of the research questions being asked; they were identified and coded for later analysis as a potentially emerging theme. These orphan codes included references to *place/space* (the importance or necessity of space and place in both the use of mobile technology and disciplinary activity), *subversion* (evidence of the participant choosing to reject or subvert a standard practice from either a social or disciplinary perspective), *university perception* (unprompted mention by the participant of their perception of their university as a vehicle for trajectory), and *significant passages* (these were simply passages that defied patterns, yet were flagged for their perceived significance- a case of "classification reasoning plus...tacit and intuitive senses" to determine significance in the data (Saldaña, 2012, from Lincoln & Guba, 1985, p. 347). Once these open codes and attributes were identified, the next step involved the broader grouping of codes to categories.

5.15: From Codes to Categories

While these initial open codes and related attributes provide a categorical structure for the data and the subsequent analysis, they were insufficient on their own in identifying the specific manner in which the data answered the research questions. As such, the next stage of coding involved a simultaneous process of moving from codes to larger categories, and from the attributes to their specific analysis points based on their mode. So, this stage involved two movements: one towards broader categories and another towards specific attributes of the data type.

This movement towards specific data types is seen as a refinement of the initial attributes towards subcategorization. How mobile technology use is broken down by data type and how that type aggregates several attributes of analysis (site of image of Rose, 2012, for example). This is an attempt at categorizing to both "get up from the diversity of the data to the shapes of the data, the sorts of things represented" (Richards & Morse, 2007, in Saldaña, 2012, p.12) and to 'get down' to the attributes specific to each data type. These movements towards broader and more specific categorizations represent an attempt to satisfy the complexity of the data collected and their significance in answering the research questions.

As these codes broadened into larger categories, the original structures were redefined as can be seen in the following table. Certain codes were repositioned into different categories (orientation and navigation, composition, etc. were removed from Mobile Technology Use and repositioned as Learning & Media Practices), certain codes were dropped or replications were removed (Park's socialized activity was removed from Mobile Technology Use and kept in Learning & Media Practices), and certain codes were dropped from this level of

categorization (Audio, Image, Video proved less useful as descriptive codes at this stage of analysis). Several of the orphan codes (significant passages and subversion, in particular) were incorporated into the categories below. For example, several of the significant passages coded as such were incorporated into both the learning & media practices and disciplinary trajectories categories. Subversion was incorporated into disciplinary trajectories as evidence of either an outbound or boundary trajectory.

Categories	**Codes that comprise those categories**	**Representative Sources**
Mobile Technology Use	Informal, formal, individualized	Park (2011)
(Mobile) Learning Practices	Orientation & Navigation, Socialization & Communication, Composition, Dissemination, Field Work	Hjorth, Jin & Yoon (2014), Yoon (2006a, 2006b, 2003), Park (2011)
Learning & Disciplinary Trajectories	Informal, formal, faculty contact, subversion, university perception	Wenger (1998)

Table 8: From Codes to Categories

5.16: Transcription: Identifying Coherence through Artifacts

To establish a learning trajectory, these codes, categories, and phases of activity must cohere across all the modes of data. As such, it is important to establish the transcription method used across the modes, the transcription attributes for each mode, and how these cohere into a larger presentation of learning trajectory. In

this section, the transcription tables are presented for each of the modes of data being collected along with a rationale for the attributes composing these tables, and then a discussion on how these cohere into a larger field of activity. The sequence of transcription was based on the phase of analysis being undertaken. In Phase 1, the interviews and mobile artifact data would have been transcribed and analysed towards crafting the Phase 2 reflective prompts. As such, the basic process for the data would follow this sequence of activity.

1. Translate and transcribe interviews; Coding
2. Image Transcription
3. Video Transcription
4. Audio Transcription
5. Analysis looking for coherence or emerging themes in Phase 1 data
6. Crafting and delivery of reflective prompts for Phase 2
7. Analysis of reflective prompts
8. Analysis of all data collected

What follows are the transcription tables and rationales for each of these data points as sequenced above. Certain attributes, adapted for the particular mode, are found across each data point in an attempt to begin to identify the patterns of coherence that might emerge from the larger dataset.

5.16.1: Image Transcription

Imagery has arguably the largest body of transcriptive research to draw on and, as such, it was treated first. However, this is also due to its familiarity as a mobile medium in the South Korean context. Each of the graduate students participating highlighted the importance of imagery in their data submission by placing it first in whatever organizational structure they used (email attachments, folders on a

zip file, etc.). The most readily identifiable attribute (based on the thesis so far) are the informal, formal, socialized, and individualized categorizations of Park (2011). Insofar as it was possible to tell, the activity taking place in the site of image was categorized in this way. It is interesting to note that many graduate students removed the ambiguity from this categorization by providing descriptions of each of their mobile artifacts without being prompted to do so; as such, there is some intentionality in the imagery through the inclusion of descriptions. Many were quick to note that Image A related to Course B or Study Group C, and so on.

Several of the attributes presented in the following table are drawn from Rose (2012) sites of image, production, and audiencing, respectively. These are employed precisely as they attempt to identify intent of what is being shown (image), where it was made (production) and how the audience is allowed to perceive and "renegotiate" meaning of the image (audiencing). As transcription tools, they are useful in establishing a frame of intent and capacity, that is the graduate student selects a site of the image, one that presumably corresponds to the narrative of intentionality (Bruner, 1991) unfolding in the interview, engages in technological and often informal practices to create that image (site of production) and situates the viewer in a particular location in respect to this image, aligning their gaze and foregrounding particular artifacts or practices in the image itself (site of audiencing). Several of these sites were adapted for the video transcription as well.

Building on these sites of image, production, and audiencing is the emotional, or expressive content (Taylor, 1957) of the image, described as 'the combined effect of subject matter and visual form' (from Rose, 2012). This attribute is used to transcribe the mood or atmosphere of the image in an attempt to foreground the emotional connection that the graduate student has to what is being presented. If

an image is depicting a formal academic practice, for example, the expressive content might be the foregrounding of a student sleeping at their desk in the midst of a lecture by faculty. While rarely as overtly suggestive as this, the mood or atmosphere of an image begins to establish an affinity for the activity being depicted. Expressive content is adapted as an attribute for transcription in the video data as well.

While coherence begins to emerge from the sharing of attributes across modes (sites of production and audiencing; expressive content), an additional attribute borrowed from sound studies is used here to identify a coherence or intertextuality across modes. This is parallel vs. contrapuntal, adapted specifically from parallel vs. contrapuntal audio (Monaco, 2009, from Rose, 2012) defined as the following: "parallel sound is sound that is actual, synchronous with and related to the image. In contrast, contrapuntal sound is commentative, asynchronous and opposes the image."

Again, modes of coherence emerge. However, at this stage, this research is merely transcribing the instances where image, video, and audio intersect as parallel (for example, an image depicting a coffee shop study session and the video and audio depicting that same coffee shop session) or contrapuntal (audio of loud public places and imagery of quiet, study spaces, for example). Yet, this parallel vs. contrapuntal distinction can be *intertextual* (is what is depicted in the audio reiterated in the image, for example) or *intratextual* (are there contrapuntal or parallel elements in the image itself?).

Attribute

Type of Activity (informal, formal, individualized, socialized) (Park, 2011)
Site of Image (Rose, 2012)
Site of Production (Rose, 2012)
Site of Audiencing (Rose, 2012)
Activity being presented
Content/Expressive Content (Taylor, 1957 via Rose, 2012) (the 'mood' or 'atmosphere' of an image)
Parallel vs. contrapuntal imagery (adapted from Monaco, 2009): how do the materials 'speak' to one another?

Table 9: Image Transcription

5.16.2: Video Transcription

Many of the attributes are shared across several modes of data (site of image, production and audiencing, expressive content, and parallel vs. contrapuntal data). The unique attributes for video include an indication of whether the activity taking place within the video was documented (captured *in situ*) or composed (orchestrated and performed). Other attributes included technical distinctions (length, technology used, and time when activity occurred). The overall video transcription is designed to present and cohere instances of trajectory in the video data, rather than "preserve the temporal and sequential structure which is so characteristic of interaction" (Knoblauch, Schnettler & Raab, 2006, p.19). This represents a departure from prevailing multimodal approaches. Video's ability to capture "temporal and sequential structures" that illustrate "the temporal relationships of speech to visually depicted actions and events" (Jewitt, 2012b, p.6) is put in service of identifying trajectory. This thesis is less concerned with the

relationships of speech to other modes as presented in video, but rather in how they might provide consistency across multimodal data.

Video is problematic in that it often leads to overwhelming amounts of data and if mismanaged "can also lead to overly descriptive and weak analysis", which Snell (2011) refers to as "sensory overload" (Jewitt, 2012b, p.6). This potential for overload is offset in the explicit linkage of the research questions posed for this thesis to the transcription method provided below. It includes adaptations of Rose's (2012) Sites of Image, Production, & Audiencing, Taylor's expressive content, and Monaco's parallel vs. contrapuntal data. Parallel vs. contrapuntal data is complicated with video precisely because of the aggregation of modes already present; opportunities are presented to transcribe coherence with *intertextual* and *intratextual* factors. Ultimately, however, the attribute Description of Activity proves most readily pliable to the needs of this research. With this attribute, this research can explicitly cohere themes emerging from the narrative data with their video counterpart; if incoherent in that a practice of narrative importance is found to be lacking in the mobile artifacts, then this proves analytically instructive.

Attribute
Description of Activity
Type of Activity (informal, formal, individualized, socialized)
Documented vs. composed
Setting (adapted from Site of Image via Rose, 2012)
Site of Production

Site of Audiencing
Content/Expressive Content (Rose, 2012)
Parallel vs. contrapuntal audio or imagery (does the audio or imagery presented in the video parallel other audio or visual submissions?) (Monaco, 2009)
Technical (length, technology used, etc.)

Table 10: Video Transcription

5.16.3: Audio Transcription

The audio data collected was provided voluntarily. It was suggested as a possible example of a mobile artifact but not required in any way; as such, only 15 of the 25 participants in the main study submitted audio data. The submitted audio proved problematic as the vast majority of the audio recordings were ambient audio. They recorded the sounds of study spaces or lecture halls, study groups, coffee shops, buses, and subways. They were not, insofar as one could tell, documentation or composition of formal disciplinary activity or even explicitly of a learning practice. Yet, they were submitted intentionally and as such, this thesis has incorporated them into a larger coherent dataset.

While there exists a considerable body of research related to audio as speech acts or music (Neumark et al., 2010; Monaco, 2009), there exists little research by way of ambient audio. As such, the following transcription table for the audio data was adapted from the author's own research with a project exploring the sound spaces of online learners (Gallagher, Lamb & Bayne, 2016). It is important to note that the audio data in this thesis, indeed any one data type, is not positioned to stand alone, but rather speak to a coherence across the data.

Many of these attributes were adapted from Fluegge (2011), particularly *spatial acoustic self-determination* or the economic and technological capacity for employing technology to manipulate the personal sound space (headsets to block noise, etc.). It was felt at this stage of transcription that evidence of spatial acoustic self-determination might prove useful in establishing some coherence: headphones in an image corresponding to a composed silence in the audio data, for example. The remaining attributes are technical, adapted from the other modes of data, or are audio specific (Monaco's parallel vs. contrapuntal sound).

Without a convincing body of research to draw on, this research is constructed conservatively when it comes to the audio data; audio serves a secondary role as a further layer in establishing coherence and subsequently trajectory. It is hoped that the work presented in this thesis stimulates further research into the data potential of ambient audio on studies of mobile learning.

Attribute
Technical (length, technology used to produce)
Description of Activity
Sound (silence vs. sound)
Sound (speech vs. ambient)
Spatial acoustic self-determination (Fluegge, 2011)
Composed vs. documented

Parallel vs. contrapuntal sound (Monaco, 2009) (does it relate to other submissions (video, imagery, text)?)

Table 11: Audio Transcription

5.16.4: Reflective Prompts Transcription

Representing the second phase of data collection, the reflective prompts are being used as a secondary data collection technique primarily to triangulate themes emerging from the interview and mobile artifact data. These prompts were composed specifically in response to the primary data. As such, the transcription attributes presented here are functional insofar as they are designed strictly to triangulate themes that had already emerged by this stage (Phase 2).

For the pilot study, this involved prompts to triangulate the findings from the one narrative interview and submitted artifacts. The participants were asked to reflect on one granular aspect of disciplinary practice, learning practice, or mobile use evidenced from the data collected in Phase 1. The second reflective question was a prompt discussing their submitted mobile artifact. This prompt was used in the pilot study to elicit the design, learning, and media practices used to construct the artifact. Subsequent prompts, when warranted, were used to elicit reflection on how their practices have changed in light of their participation in the pilot project. These reflective prompts were designed not only to cohere the themes emerging from the Phase 1 data as well as bookend the narrative interviews in their investigation of mobile use and learning practices, as well as their participation in their discipline both formally and informally.

For the main study, the only considerable alteration to these reflective prompts were their quantity (all participants in the main study were presented with a minimum of five prompts) and the scope (questions included learning practices

and themes emerging from the interviews, as was the case with the pilot study, in addition to questions identifying professional or academic inclinations, future prospects or goals, etc.). The reflective prompts were transcribed according to the following:

Attribute
Functional (length of answer, answers the question asked)
Informal/formal response: emoticons, informal language (adapted from expressive content of Taylor, 1957, but positioned here to note content that moves between the formal and the informal)
Field of production (Rose, 2012)
Parallel vs. contrapuntal (do these answers support themes emerging from the data?)
If not, does it contradict or subvert?

Table 12: Reflective Prompt Transcription

5.17: From Transcription to Analysis

The transcription tables presented in the previous sections are designed to provide evidence that might begin to chart activity across the nexus of multimembership. To begin, the narrative emerges from the interviews that is used to guide much of the subsequent analysis, likened to the intentional state entailment of Bruner (1991). There is activity spanning the formal, informal, individualized, and socialized spaces adapted from Park (2011), and activity spanning the spectrum of multimodal data. There is activity where evidence is emotionally suggested that might be used to indicate the veracity of a membership or trajectory (expressive content of Taylor, 1957), there is evidence

suggesting, or corroborating, coherence across all of this (parallel vs. contrapuntal data of Monaco, 2009), and the reflective prompts themselves designed to corroborate findings emerging from Phase 1 transcription. These are presented as the graduate student provided them across their data points, and emphasized their importance particularly in the narrative bookends of data collection: the interview and reflective prompts.

From this initial transcription, points of evidence across the social topologies of these graduate student emerge (Bayne et al. 2014), across the landscapes of practice (Wenger-Trayner, E., & Wenger-Trayner, B., 2014), across the interactional contexts (Dourish, 2004) in which the students participate. There is also evidence directly answering several of the research questions designed for this thesis namely- *how do graduate students in higher education in the humanities in South Korea use mobile technology to support their learning practices?* and *what mobile artifacts are being produced by graduate students in mobile technology in the humanities in South Korea?* The learning practices articulated or evidenced by, often explicitly, these graduate students in their Phase 1 and Phase 2 data provide evidence that begins to answer the research question-*what learning practices are presented in this mobile technology use?*

As such, this transcription provides both an indication of the topology of these graduate students, points within that topology that might suggest learning or a movement towards a particular community, and the learning practices that emerge that are used to manipulate that topology and activity towards an intentional state entailment (Bruner, 1991). Analytically, now it becomes a matter of charting a trajectory within this topology through artifact, activity, and intent, a charting that will answer the following research questions: *Does this combination of mobile technology use and media practice suggest a learner trajectory in respect to*

the disciplinary community? and *If so, is this trajectory inbound, outbound, or boundary?*

The analytical framework attempts to build upon, and re-employ, many of the attributes of the transcription tables described in the previous sections. This is most notable in relation to the attributes used to establish a coherence across the mode of data. Multimodality is regulated to this service of coherence by merely confirming, or evidencing, activity or artifacts that cohere to the narrative emerging from the interviews.

The analytical method selected to investigate the data represented a range of modes, a range of authoring positions within the compositions, as well as a range of environments in which that data was generated (messaging applications, mobile technology, face to face interview). Hence many of these analytical attributes reflect these environmental or productional concerns (for example, Rose's (2012) site of image, production, and audiencing is adapted to the aural, image, and video data).

Further attributes identify the materials of the composition as well as their juxtaposition. Taylor's (1957, adapted in Rose, 2012) attribute of expressive content is used to identify 'the combined effect of subject matter and visual form'. An additional analytical attribute selected was to identify whether the data was composed or documented as a genre, which might be seen as an implicit measure of response bias. In some cases, the graduate student was asked to confirm in the reflective prompts whether the data represented a documentation of their learning or participatory activity, or whether they were composing such activity and their position within it. If a composed activity, this would suggest a curatorial element in the narrative (Potter, 2012).

Yet, the transcription attributes described above are not the analysis as such. They are a necessary step from the granular to the aggregate, or from the narrative and the artifacts to the trajectory, yet, they are not the trajectory itself. As the trajectory is the analytical focus of this research, this thesis must address how this research intends to establish learning trajectory. While not a fixed course or even the problematic assertion that participants are either centering (inbound), de-centering (outbound) or maintaining a peripheral movement (boundary) in relation to a particular community:

> "the term trajectory suggests not a path that can be foreseen or charted but a continuous motion – one that has a momentum of its own in addition to a field of influences. It has a coherence through time that connects the past, the present, and the future" (Wenger, 2010, p.134).

The methodology presented thus far has elements of this temporal coherence: the narrative projects of intent and agency, the multimodal presentations of expressive content, the reflective prompts gauging community perceptions and identity. All of these link the past (what has been done), the present (what I am doing), and the future (where I hope this will take me). While not reducing this highly complex concept of trajectory to an empirical formula, this methodology has provided data that speaks to all three of these temporal positions. It provides data that speaks to affinities, alignments, and contradictions across modes and communities. As such, the analytical position of this thesis is built around coherence itself. What follows is a summary table of the attributes that are being used to identify coherence, attributes that provide links between the data types. The final row establishes the preliminary definition of coherence advanced in this thesis.

Data Type	Source	Focus of Coherence
Interview Transcripts & Reflective Prompts	Bruner, 1991; Parallel vs. contrapuntal structure (Monaco, 2009)	Events (historical) (narrative diachronicity; this time element should help reveal the trajectories; participation in communities is a form of intentional state entailment.
Video	Rose (2012); Monaco (2009)	Activity being presented; Site of Audiencing, Production, Image; parallel vs. contrapuntal structure as coherence (internally within itself and externally with other modes of data)
Audio	Fluegge (2011); Monaco (2009), Kress and van Leeuwen (2001); Rose, 2012	Activity being presented; Spatial acoustic self-determination; parallel vs. contrapuntal structure as coherence (internally within itself and externally with other modes of data)
Imagery	Rose, 2012; Kress & van Leeuwen, 2001; Monaco, 2009	Activity being presented; Site of Image itself, Site of Audiencing, Site of Production; parallel vs. contrapuntal structure as coherence (internally within itself and externally with other modes of data)
Reflective Prompts Data	Bruner, 1991; Parallel vs. contrapuntal	Used primarily to confirm emergent themes from Phase 1 data collection; also to articulate media and learning practices from mobile artifacts

	structure (Monaco, 2009)	
Combined Data	Coherence: Monaco (adapted from 2009); Kress & van Leeuwen (2001) & Trajectory: Wenger (1998);	Coherence across the data is used to identify the consistency of the narrative being applied, and its use in charting a larger trajectory. Trajectory (Wenger, 1998) is charted through coherence across these modes and affinities for a particular community are identified through expressive content (Taylor, 1957). Interpretations of these narratives are confirmed through reflective prompts.

Table 13: Transcribing Coherence

Coherence establishes how individual data points work in relation to confirm or contradict the larger narrative; coherence establishes a means for triangulation by looking for parallel structures or concepts across the data and tying them together in larger aggregations. Coherence is used to ascertain how the various modes and materials 'speak' to one another to form, or negate, a larger narrative of participation. This research parallels but does not adhere to Fairclough's (1992) manifest intertextuality, a series of references, links, and repetitions, often explicitly, designed to clarify or expand on an idea. The adaptation taking place here is not the linkage of the idea or theme across the data through an explicit repetition (the participants' data does not contain great evidence of repetition in this explicit sense of "as I said before…") but rather the suggestion of a particular theme through the inclusion of certain mobile artifacts or textual data. For example, a student discusses a learning activity in the interview, which is then composed as a video, which is then discussed in the reflective prompts. It is

presupposed that rarely would this coherence present itself so linearly or explicitly, but this example is instructive for how coherence might be found across the data points. With each subsequent linkage of meaning across the data, with each repeated thematic suggestion from text to audio to video to image to text again, this research draws closer to coherence. In this case, that coherence becomes the suggestion of a learning trajectory. Whether or not that linkage was explicit or even conscious is not the focus of this research; rather, the focus is on the repetition or repeated suggestion of a particular theme or particular narrative to suggest a particular learning trajectory. For some, however, the presence of incoherency (where narrative elements are contradicted in another mode of data) is presumed to be suggestive as well.

Explicit or not, this analysis proceeds as if these graduate students were to demonstrate an intentionality across their data. Without this additional layer of intentionality, this research is left with discrete pieces of data existing outside a coherent narrative. By asking the participant explicitly to sequence them into a narrative of daily or weekly activity (one of the first questions on the narrative interview), they first supply chronological intentionality. The graduate student begins to solder these artifacts into a larger narrative of disciplinary or community participation, one with a chronological organizing construct. The work of charting a learning trajectory from this narrative is made easier as the chronological structure is provided; evidence appears to suggest how the individual artifacts worked in sequence to craft a larger narrative of participation. This is then confirmed, or not, by the reflective prompts which probe participant intent or the accuracy of the interpretation.

There is also evidence that begins to establish a means of answering the final research questions: *Does this combination of mobile technology use and media*

practice suggest a learner trajectory (Wenger, 1998) in respect to the disciplinary community? and *If so, is this trajectory inbound, outbound, or boundary?* Simply, this research begins with a narrative structure under the assumption it is an intentional act, mobile artifacts and learning practices within that narrative structure evidence a particular trajectory, and trajectories are confirmed (or not) through reflective prompts. This thesis links the multimodal attributes and the narrative attributes of this analysis through coherence: does activity, intent, practices, etc. run throughout the data collected? If so, what trajectory does this coherence suggest? If not, what trajectory does this incoherence, or inconsistency, suggest?

5.18: Trajectory as Narrative and Coherence

This thesis notes the particular importance of mobile technology in both evidencing and structuring this trajectory, as well as the role of expressive content in substantiating the narrative being presented. It attempts to position all of these trajectories and activity amidst a larger social topology (Bayne et al., 2014) with repeated movements through multimemberships (Wenger, 1998). Ultimately, all of this evidence, activities, practices, artifacts, and so forth congeal around intent, whether explicit (in the interviews or reflective prompts) or implied (through the mobile artifacts).

As narrative emerged from the interviews in relation to a particular community, appeared in the mobile artifacts, only to be reflected on and confirmed in the reflective prompts all the while being supported by expressive content consistent with that narrative, it is presumed to present evidence of an inbound trajectory. Inbound trajectories indicate a general movement towards more robust community participation through activity at the boundaries, or peripheries, of

community practice. Coherency as defined in this framework makes that inbound trajectory visible, even if contested or at times contradictory.

When there was incoherency in the data, when a narrative or theme was contradicted or not clearly supported in the mobile artifacts, or subverted in the reflective prompts; when expressive content betrayed the narrative being structured in the interviews, and so forth, the tension emerges suggesting a boundary trajectory. When informal media or learning practices informing formal participation are not adapted sufficiently, or when expressive content suggests affinities or equal temper for other communities or identities, then there is evidence of a boundary trajectory. The outbound trajectories reclaim coherency but in opposition to the community under observation. Evidence would include a narrative structure in opposition to community identity and practice, a subversion to modes of communication or socialization, a refocusing of activity away from community participation in the mobile artifacts, and a confirmation of this rejection in the reflective prompts.

This thesis proceeds fully aware of the problematic aspects of such a positioning of inbound, outbound, and boundary trajectories. To begin, this thesis assumes that these are not monolithic structures nor fixed courses, but rather aggregated movements of often disparate activity bounded within a community or communities' context. As such, graduate students could easily present an inbound trajectory while harboring practices subversive to or contradictory of community practice. Likewise, outbound trajectories could still maintain elements of inbound movement. Boundary trajectories are problematic insofar as they are attempts to chart a lack of, or imperceptible, centering towards any one community. Trajectories, as such, are suggestions and not absolutes.

This positioning of learning trajectory also problematizes the expectation of movement itself, movement that community of practice theory privileges and foregrounds. The implicit expectation in all of this is that there is movement towards at least one community. Stasis, or the effortful coordination of activity to resist centering, is theoretically possible, and in the case of graduate students assumed to be relatively common. These limitations aside, this thesis now turns to the initial test of this methodology, the pilot project as described in the following chapter. This is followed by a discussion on adaptations as a result of this pilot project.

Chapter 6: Pilot Study

6.1: Pilot Project Structure and Sample Selection

The pilot project was conducted from May 2013 to March 2014. The participants were all graduate students in the humanities in Korean universities in Seoul. There were eight participants in total for the pilot study, representing a total of two universities in and around Seoul, one a private and the other a public university. Several of these participants answered a call for participation posted to the graduate student sites for their respective universities.

Preparation included discussions with the translator hired specifically for this research project. This translator has worked with this researcher on several past projects and is familiar with the nature of this work. Several meetings were conducted ahead of the pilot project to discuss the nature of the narrative interview, data points that to be addressed based on the research questions, and the subsequent translations of the research materials. Although specific data points have been identified, the overall structure is entirely dependent on the narrative of the participant; questions are open-ended, flexible in terms of sequence, and participant driven in terms of "acceptable" answers. The translator was briefed on the constructions of probes for further discussion. Several practice interviews were conducted with this researcher. Further discussion addressed the second and third phases of the research design: the mobile artifacts, and the reflective prompts. The eight participants then completed the three phases of research activity: narrative interviews, mobile artifacts, and reflective prompts. All data collected was recorded and stored securely in encrypted cloud storage services.

The data presented in this chapter originates from two participants named Misun and Su Ah. Misun majors in literature and also studies Persian and Arabic. Su Ah studies English Language and Literature with a further concentration in Korean Studies. To begin, the narrative interviews attempted to identify what participation in their discipline looks like for these participants and how mobile technology mediates that process.

These are presented in an overlapping manner switching from Misun to Su Ah and back again depending on the subject at hand. This was an attempt to foreground the patterns emerging from the data. This was adapted in the main study to present the vignettes separately according to individual; this adaptation was needed in respect to the learning trajectories being evidenced by *individuals* rather than by patterns of engagement being evidenced by the *aggregated group*.

6.2: Daily Routines

Establishing the daily routine of the participant was considered critical in providing a chronological narrative from which learning practices and informal, formal, socialized, and individualized activity might emerge. It would also begin to demonstrate the role of mobile technology in the everyday practices of these individuals (Lankshear & Knobel, 2011), and how this larger environment of activity reveals the learning trajectories that these graduate students are evidencing.

As such, this chapter alternates between Misun and Su Ah in their depiction of their daily routine and how mobile technology affects or structures that daily routine. However, both Misun and Su Ah, when asked about their daily routine, combined these questions by presenting their daily routine with the technology that is used to mediate it. Presumably, knowing the subject of the interview ahead

of time allowed them to anticipate the structure of the interview. Please note that information found in parentheses and in bold are the author's additions.

Misun's Daily Routine

> "It takes about 50 minutes to get to school…When I come to school, it is difficult to concentrate solely to class because I have to reply messages on my iPhone. I also look up every time something I am not sure of pops up during the lecture. Before lunch, **I group chat** with friends via KakaoTalk to make a lunch appointment. My university provides lots of information about special lectures by message so I read that too. I always check the news on NAVER frequently but nowadays, I began reading the paper news. That is because I believe **it provides more profound information**… For homework, I **check with my friends** and exchange information on their progress."

For Misun, the daily routine moves between informal and formal activities, with technology mediating that process in pragmatic ways. The mobile technology is being presented as a vehicle for receiving both important and casual information, as a means of both social connection and distraction, as a valued, intimate technology as well as merely a piece in a larger technological system of activity. Misun also foregrounds the social communication taking place through her mobile technology over the formal university communication taking place there. The vast majority of this daily routine is dedicated to social communication or independent study, with only two references to formal university contact.

Su Ah's routine mirrors Misun's in many ways. Both use their mobile technology as a means of social connection, both have nominal orientations towards socialized communities, both use their mobile technology for research and reference. Su Ah's

has two international orientations, one towards her boyfriend in Canada and another towards her father in China. Su Ah's also demonstrates a technological interest in her mention of different applications, influenced in part, presumably, by her boyfriend's work in mobile technology (mentioned later in the interview).

Su Ah's Daily Routine

> "I wake up around 8, 9am…Mostly my father leaves messages on my family group chatting room because he is in China right now. Our family uses **group chatting** a lot. Also my boyfriend leaves messages while I am asleep. He is in Canada so there is a lot of time difference…During class, I look up things I don't understand during the lecture, with my cellphone**. I don't use Facebook, it took up too much of my time so I inactivated it…I don't like staying in school**. So I study my class materials or homework at home or in a café near my house."

Su Ah also presents mobile activity that shifts between informal, formal, socialized, and individualized states, but contrasts slightly by foregrounding the applications and services as opposed to the technology directly. Su Ah also alludes here to her studying preferences, a theme she reiterates at later stages of the interview and emphasize almost exclusively in her mobile artifacts, stressing the individualized nature of her learning practices.

6.3: Learning Practices and Sociocultural Influence

All the participants were asked about their learning and how they interact with faculty and fellow students and other peer groups. It was hoped that this discussion around interaction, informal or formal, might serve to map the larger spectrum of activities that these students engage in to make meaning in their discipline and how social interaction influences this participation. To begin, Misun

presents her interaction with her fellow classmates by way of both face to face communication and technologically-assisted communication. The prompt posed here did not specifically ask for the technology, but merely for acts of participation. Misun is anticipating the purpose of the interview by addressing the technological uses of mobile technology for her discipline.

Misun's Disciplinary Participation

> "I am still **close with some good friends and we frequently KakaoTalk each other** when we have questions on school work. Since there are not many people in our major, I **listen to lots of lectures with my seniors**. And because we do lots of group projects, we are close, we share information. It is the same when individual study materials or homework. I **get a lot of information from my seniors** because there is not much information. The dictionary website I mentioned earlier was also something my senior told me."

The senior-junior relationship is a concept that has great significance to the social interactions of these students, one that supersedes mentoring. This social interaction ("listen to lots of lectures with my seniors, we are close, we share information, I get a lot of information my seniors") begins to suggest a learning trajectory as these seniors, arguably more so than faculty, provide the means of learning about the disciplinary practices of the community. Misun positions herself in strong affinity to these seniors, therefore *suggesting* a strong affinity with the discipline.

Su Ah's Disciplinary Participation

> "If there is a group assignment, I exchange numbers with my group and **we discuss on KakaoTalk** via group chat. There are about 40 people in English,

> but I **believe I am not that close to my department**. For example, **I didn't even have their contact number before I was invited to a group chat** by a classmate who was going out for the university president election. My department provides information through Facebook, but since I don't use Facebook anymore I don't get information right away. I used to keep Facebook to get informed on events coming up, but the information provided was not really useful to me now **so I stopped using Facebook."**

Su Ah presents evidence to suggest a different trajectory, particularly in relation to her discipline. She foregrounds her disengagement from commonly used mobile applications, her lack of contact with the department, all of which counteract, or mitigate, the reciprocity expected of South Korean social relationships, particularly those managed through mobile technology. Su Ah emphasizes learning activity as individualized and strictly utilitarian. While many of the pilot participants expressed an increasing sense of isolation in their work in graduate school, Su Ah was the only one who expressed this lack of connection so directly and unequivocally.

Many of the same patterns presented in the narrative interviews were also present in the mobile artifacts for both Misun and Su Ah. The images presented below were generated by the participants, but they were assembled into a collage by the author strictly for space considerations. Both Misun and Su Ah organized all their media into folders with titles, unprompted. The first set of images that Misun presented highlights the movements between informal, formal, socialized, and individualized states of activity. Misun presented eight images total for this particular folder; these four were chosen as representative images. In total, there were four images presenting motion (commuting to and from university), and four representing a relative stillness (study locations, controlled social interaction

around a table, a favorite table in the library). Misun was one of several participants who overtly emphasized the motion itself, suggesting the importance of mobile technology in mediating that motion towards learning.

Figure 5: Misun's Learning Activity

The audio Misun presented was a short recording (approximately one minute in length) of her subway commute. She recorded audio of the subway noises and ambient chatter, as well as a subway announcement indicating the next stop. The audio supports the motion-based aspects of the images, and reinforces many of the passages from the interviews on the need for making use of that time in motion. In summation, Misun presents a balance, in both the selection of media

and the selection of materials that compose this media, of motion and stillness, of public and private space.

Su Ah provides a contrast. The set of images that Su Ah presented contrasts with the images by Misun in their presentation of motion and sociability. Su Ah, unique amongst the participants, presented four images of her study spaces. All of these images present a stillness that corresponds to Su Ah's interview passages of her study spaces. In this narrative, Su Ah is a serious student with the trappings of traditional formal study: books, laptops, notebooks, papers, chairs. Yet she is an individualized one, one eschewing the more socialized aspects of disciplinary engagement.

Figure 6: Su Ah's Learning Spaces

The audio recording presented by Su Ah reinforces the stillness of the imagery. It is an ambient recording of her study space, presumably the same one presented in the images and video. There is very little sound aside from a few keystrokes on the laptop and a shuffling of papers. A faint sound of shuffling feet can be heard as Su Ah presumably moves from one part of the room to another. Su Ah is composing stillness into her narrative, perhaps suggesting that the motion presented in the video (a short recording of her moving around the same room presented in the images) was either an aberration, or an unconscious presentation that contrasts against the more conscious visual presentation as a 'serious' student.

In this context, mobile technology serves seemingly contradictory purposes. It serves to mediate participation in the discipline, and in some cases, augment it (particularly in the case of Misun's ability to transform her commute into learning space). It also serves to distract or confuse participation (distracted by text messages or the noise to signal ratio of Facebook communication). Therefore, the use of mobile technology as a means for disciplinary engagement is a dynamic one, one shaped by the fluid context of the immediate purpose and environment (formal study on or off campus; in motion or in stillness) and competing contexts (suggesting the nexus of multimembership). This suggests that Phase 2 data collection overtly address the fluid role of context in learning as structured through mobile technology.

6.4: Patterns and Emerging themes from Phase 1

The learning practices presented demonstrated several different activities. The first was the use of mobile media to present and compose space. Both Misun and Su Ah presented the composed spaces of study with materials chosen for their perceived (by the audience) or functional (by the participant) value. In particular, Misun's video presents four carefully composed spaces of learning and disciplinary

engagement, suggesting an awareness of or a desire to have this presentation received as 'proper' or ascribing to a particular disciplinary etiquette. Presenting space itself as the site of audiencing suggests the transformation of space into place. This was especially evident in Misun's use of her commute as a learning space; it required a transformation to be made useful. This relates to Gazzard's (2011) reference to Dourish's (2006) "[w]here 'space' describes geometrical arrangements that might structure, constrain, and enable certain forms of movement and interaction, 'place' denotes the ways in which settings acquire recognizable and persistence social meaning in the course of interaction." The interaction taking place here is the selection and presentation of space as a context for both structure and interaction as well as a place of social significance (the bed, the favorite study space, the view from the bus).

6.5: Data Collection and Analysis Phase 2

Several questions arose from this initial analysis of the Phase 1 data that were incorporated into the Phase 2 data collection. Each participant's data from Phase 1 was analyzed and several sub-questions were drafted addressing particular points or themes emerging from the Phase 1 data. All participants, including Misun and Su Ah, were asked in Phase 2 whether their participation in this study had changed the way they interact with their discipline or with mobile technology. That was the only prompt asked of all the pilot participants. All the remaining prompts drafted for Phase 2 were specific to the individual and the themes presented in their data.

Misun mentioned her long commute in the interview and had followed that up in the mobile artifacts with several images from her commute. So, a question was drafted to probe this further in Phase 2. The question involved to what extent mobility affects the nature of her learning and participation in her communities.

Su Ah, in contrast, presented quite a great deal of stillness and intimate space in her mobile artifacts. In this case, a question was drafted relating to the role of individualized practice in her learning. Why was there such an emphasis on personal, intimate space in her data? What role does this private space serve for her and how does this affect her participation in her communities?

These reflective prompts are addressing two points. First, the prompts are attempting to directly identify and further articulate themes emerging from the data specific to the narrative of the participant, to verify if they are indeed present in the participant's thinking or activities. Some of these themes inform, but do not directly relate to the research questions for this study. The second purpose of these prompts is to cohere the emerging themes to the research questions. Several of the prompts do just that, namely the prompt on how their view of their participation in their major or their use of mobile technology has changed since they began this research project. This prompt is overtly reflective in order to determine the functional narrative. This prompt is attempting to cohere the narrative that shapes events (participation and mobile technology use for specific learning or projects) into coherent presentations of time. From there, meaning can be attached to this coherent narrative (Bruner, 1991). It is hoped that the participant, reflecting on their overall narrative, will begin to reveal a more coherent account of their learning trajectories through multimemberships and how mobile technology mediates these.

> Interviewer: "Many of your images were of you in motion (bus, subway, etc.). Do you spend time on these commutes and journeys thinking about your major or thinking about something you learned? How important is this mobility in your everyday life?"

> Misun: “Mobility takes up a big part of my life. During semester, I spend 2 hours commuting from my home to school. Other than going to school, I use public transportation often. I tend to **think, organize my thoughts and study** for the upcoming exam in the bus or subway. I can spend the commuting time fully and efficiently by doing those activities. Other than thinking or studying I **gaze at/ watch** the people and view around me. Mobility is important to me because I can do all these activities.”

Misun positions mobility as an important aspect of learning and disciplinary engagement for utilitarian reasons (two-hour commute, using public transportation often). She also presents this time in motion as a time of learning (“think”), preparation to learn (“organize my thoughts”; “gazing at people”), or as a direct disciplinary engagement (“study for upcoming exam”). Misun concludes this brief passage by reiterating the importance of mobility, linking a value judgment (efficiently) to a utilitarian presentation (mobility allows her to spend the commuting time “fully”.) For Misun, mobility and the mobile technology used to manipulate that mobility enables a series of practices (learning, studying, direct disciplinary engagement, reflecting, relaxing) that directly inform her learning and her disciplinary participation. This presentation of mobility was presented consistently across Misun’s interview, through many of her mobile artifacts, and now again through her Phase 2 data, suggesting coherence.

Su Ah emphasizes the role of space in a much different way, stressing instead of mobility the role of personal space and stillness. However, in both passages we see an active manipulation of space; for Su Ah, we see the role of making spaces familiar and conducive to learning (“study at home, in my room, with music to reduce stress”). This is an act of space manipulation, an act of preparing to learn rather than just learning itself.

> Interviewer: “Are these all personal spaces? I.e., do you find yourself engaging much with your major (discipline) in public spaces, i.e. the subway or in public?”
>
> Su Ah: “Mostly, I study at home, in my room. The only times I study outside is when I am short on time (something is urgent). In those cases, I go to a café near school or study in the classroom during break in between classes. However, that seldom happens, **I usually study at home. I recorded all my audio in my room.”**

Su Ah only foregoes these controlled environments in aberrations from the normal activity (“the only times when I study outside is when I am short on time”). This manipulation of space is not overtly mediated through mobile technology aside from her communication with her informal communities, a point Su Ah reflects upon in her final answer. These passages begin to illustrate the range of participatory practices in her discipline. The studying, the preparation of space, the removal of the unfamiliar, the mitigation of stress through media, these are all acts of participation, or a preparation to participate, in the discipline.

The final question, having them reflect on the changes in their practices since they began participating in this study, produced a narrative to which both participants attached meaning. In the case of Misun, this attached meaning involved an evaluation of her current practices and recommendations for change. This is consistent with Misun’s utilitarian approaches to her learning and participatory practices.

> Misun: “Before participating in this research, I didn’t know how and how much I use mobile in my daily life. I realized that I use it in class, for my study and in my spare time; that is nearly every time, everywhere, for every activity. I was a bit surprised…This is something I would have never expected few years ago. The fast development of technology was amazing but the fact that **I am ‘too’ occupied with it** was something to think about. **There were not many face to face, personal interactions with my friends** and family. I would like to **lessen my use of mobile technology** from now on.”

The ubiquity of mobile technology use backgrounds an appreciation of its use for learning and participation across formal and informal spaces. In other words, its ubiquity makes it implicit, which suggests the need for reflective prompts asking for an evaluation of their activities over a course of time. It also suggests the need for careful consideration of vocabulary to describe these practices as several participants did not believe they used mobile technology for disciplinary engagement or learning until confronted with this question at the end of their data collection.

While Misun used mobile technology for learning or participation, Su Ah began to realize how little she used mobile technology to engage with her learning or discipline. This is in part due to her individualized learning practices and to her view of mobile technology as outside the scope of formal participatory or learning practices. There was no connection made between this “communicational” use and disciplinary participation.

The evidence presented here has suggested the forms of the participants’ disciplinary engagements as well as their use of mobile technology to mediate

those engagements. This has satisfactorily answered several of the research questions, but the evidencing of a particular trajectory is hinted at but ultimately inconclusive. This suggests a design alteration is necessary for the main research study.

6.6: Analysis and Answering the Research Questions

The themes that emerged from the data suggest that the research design employed for this pilot study was sound in that they provided evidence that began to answer the research questions.

How do graduate students in the humanities in South Korea use mobile technology to support their learning practices? -The graduate students involved in this study use mobile technology for learning in ways that can generally be classified in two ways. There was evidence within the data of a direct engagement with disciplinary activity, whether that be through the studying of disciplinary content, communication with classmates, the collection of data for design activities, or even the review of a lecture for a particular class. The second way in which students use mobile technology to support their learning practices is through the role of technology in transforming space into learning space, or through the transformation of habitus (Kress & Pachler, 2007). Students carved these learning spaces to prepare, or align, their engagement with the discipline.

Both these processes suggest legitimate peripheral participation (Lave & Wenger, 1991). Legitimate peripheral participation has relevance to the community of practice, is generally considered less risky or less intense, and is participatory. Direct disciplinary engagement through mobile technology supports these three aspects of legitimate peripheral participation. It is actively engaged and supported by the larger community and it involves generally less risk. The second

categorization of learning practices evident in the data was the transformation of space into learning space. While this learning practice has relevance to the larger community insofar as it represents a literacy for engaging with the discipline, it may or may not involve direct interactions with disciplinary community members. The students were just as likely to rely on informal social communities to support the resiliency of their learning, rather than their disciplinary understanding; they were just as likely to transform their learning spaces independent of social interaction.

Yet, both these processes reflect learning that is about coming to participate in a community. In this coming to participate, learners engaged in the transformation of their spaces into learning spaces as a means of preparing for disciplinary engagement are involved in this process. This research question sidesteps several of the issues surrounding learner identity and their association with the community of practice. Rather, it focuses exclusively on his learners use mobile technology to support their learning. This was evident through the use of the technology to support formal disciplinary engagement and to support the transformation of space into learning space to support that engagement. These two processes are mitigated not only by the technology but also by media, notions of intimacy and stillness, motion, intent, and environment. Yet they provide a range of activity across formal and informal learning spaces and begin to address how one supports the other.

What learning practices are presented in this mobile technology use? & What mobile artifacts are being produced in mobile technology in Korean higher education in the humanities? -The mobile artifacts being generated in this pilot study ranged quite considerably in terms of composition of media and modes, yet a few themes emerged. First, mobile artifacts are used to represent and support learning. There

were few instances of submitted artifacts that directly supported disciplinary learning either as a submitted work for assessment or as a means of representing knowledge. The majority of the mobile artifacts submitted and expressed in the interviews were either informal or individualized. These included representations of and considerable reflection on intimate learning space both individualized and socialized. These students were able to articulate the importance of these spaces in their learning practices as a means of "centering" or "calming" and thus can be construed as a means of preparing for engagement with the discipline or as a means of building resiliency for continued engagement with the discipline. In this way, the mobile artifacts are tools used to identify and structure social engagements that provide "the proper context for learning to take place" (Lave & Wenger, 1991, p.14).

Does this combination of mobile technology use, artifacts, and learning practice suggest a learner trajectory in respect to the disciplinary community? If so, is this trajectory inbound, outbound, or boundary? The focus of these research questions extends the notion of participation beyond direct disciplinary engagement. This methodology employed by this thesis attempts to follow these graduate students across all their activity in an attempt to identify the scope of participation across the nexus of multimembership and to identify any learning trajectories that might exist. As presented by Misun and Su Ah, the collected data suggest that participation and the trajectories they chart begin in or repeatedly gravitate towards spaces of great intimacy. Participation mediated through mobile technology begins with a process of transformation, of converting space to learning space, as has been discussed. While not suggestive of trajectory per se, its coherence throughout the data suggests significance.

Misun presented a great deal of coherence throughout her data as themes were picked up from one mode to another, from her emphasis on motion and mobility to her emphasis on socialized activity. Screenshots of texting applications to her non-commuting imagery of socialized, formal learning activity were reiterated in her reflective prompts. The only incoherence presented in her data can be found in her reversal of mobile technology use in the reflective prompts, a mobile technology use that heretofore had enabled, even shaped, her participation in her communities. This incoherence is ultimately inconclusive, but suggestive of tension in the overall narrative that might indicate a boundary trajectory, or a lack of centering towards any one community or another. It is a minor incoherence amidst a larger narrative coherence, however.

Su Ah presented coherence in her data, ranging from her eschewing of mobile applications towards a highly intimate, highly personal, and ultimately highly individualized set of learning practices and activities. Su Ah presented a relative balance between non-digital technologies and digital technologies. Su Ah's incoherence emerged in the video submission that suggested the importance of motion within personal space, but maintained a focus on the individualized aspects of learning.

As such, boundary trajectories emerge from Misun and Su Ah, boundary trajectories that manifest differently. Misun is making overtures towards the disciplinary community of practice (an inbound trajectory), but suggests a deference to her socialized communities (both peers and senior-junior relationships); mobility and motion also serve to mitigate any inbound trajectory that might otherwise be present (her three hour commute daily), suggesting a boundary trajectory that is neither fully inbound nor outbound. Su Ah presents a boundary trajectory differently. She eschews the socialized practices suggestive of

community practice. She balances digital technology with non-digital technology. She does, however, present studiousness and stillness, possibly as a result of her interpretation of tacit community practice. So amidst the relative narrative coherence, there are suggestions, if not assertions, that the evidence being generated from this research design is suitable for answering the research questions.

6.7: Adjustments to Research Design for Main Study

Adjustments were made to the overall research design as a result of this pilot study. To begin is my position as researcher amidst this data collection. My role as outside researcher makes authentic insider observation impossible and the potential for any sort of practitioner ethnography is removed. My presence in the interviews proved disruptive to the overall rapport that might possibly develop between the interviewer and interviewee, a rapport critical to the establishment of a free flowing narrative context. As such, in the main study I established a presence of 'non-presence' and relied on my translator's peer status with these graduate students.

Secondly, was the notion of mobility and space. As the pilot research presented in this chapter suggested, there was a strong thematic presentation of physical or material space. While analytically rich for further research and aligned with past research done by the author (Bayne et al., 2014; Ross et al., 2013), it was felt necessary to shift from a physical space and physical mobility within that physical space (for example, Misun's commute as analytical focus rather than backgrounded environment) towards a cognitive space and mobility in keeping with the position of mobile learning put forth by this thesis. With such a shift, this research foregrounds the social topologies of these students (Bayne et al., 2014) amidst the nexus of multimembership, rather than the physical spaces and

mobilities that preclude such movements. The reflective prompts for the main study were adjusted as a result in keeping with this focus on cognitive as opposed to physical space. These adjustments are applied to the main study presented in the following chapter.

Chapter 7: Presentation of Data

What follows is the main study framework for this research as adapted from findings from the pilot study. In the following, there is a discussion the themes emerging from the data transcription and analytical design presented previously in this thesis. Immediately following this discussion are six vignettes chronicling the narratives put forth by six graduate students participating in this research.

7.1: Why this data (how was it selected)?

It is important to note that the themes that formed the basis from which the main study data was analyzed emerged directly from the research questions. The themes emerging from the pilot study were reviewed and some were discarded as they proved outside the scope of this research. For example, space and stillness was removed from the main study presentation of data as it proved outside the scope of this research. Space, while complementary to many of the contextual distinctions being drawn on in this research particularly in regards to the environments in which learning trajectories are crafted, proved less revealing that the activities and uses of mobile technology from which the learning trajectories were drawn. Personal space, for example, suggested the role of individualized learning practices and activities (again, a refocus on cognitive as opposed to physical transformations) at the expense of, or to complement, socialized practices, without requiring further analysis on what that personal space suggests independently of how it contributes to a learning trajectory. As such, individualized practices are foregrounded in the main study and personal space is backgrounded in the main study as space from which these individualized practices might emerge. So space gave way to activity, practice, and artifact. As such, these themes were removed from the main study.

The themes illustrated by the vignettes that appear in this chapter were selected as they provided evidence that began to answer the research questions directly, particularly in terms of mobile technology use categorizations, mobile learning practices, and disciplinary or other community trajectories. The themes presented here are viewed as intentional state entailments (Bruner, 1991), or direct constructions of intentionality (the graduate student expressing directly how they currently exist in relation to mobile technology and their disciplines, and their projections of what that activity might look like in the future). The vignettes and the individuals they narrate were chosen as each of the six vignettes presented chart either one or all the themes presented; they are representative of the themes being presented.

Of the 25 total participants for the main study, not all completed all three data collection activities: the interview, the mobile artifacts, and the reflective prompts. As such, these participants (n=6) were not included in the vignettes as the methods involved in charting and cohering a trajectory required all three data points. Of the remaining participants (n=13), some were not chosen as they presented evidence consistent with another vignette. While each of them presented evidence that suggested a particular trajectory, they were excluded based on familiarity of the case being presented. As such, this secondary level of selection is essentially a secondary sampling strategy, a mixture of *typical* cases, those that are representative of the majority of the cases, as well as some degree of maximal variation, to integrate cases that are as different from one another as possible (Flick, 2009, p. 122). So, these six vignettes are typical in that they each correspond to other similar cases amongst the 25 and present maximal variation as they are different from one another in their representation.

7.2: Vignettes

The data is presented in the following thematic sections as vignettes. This is done primarily to make the data more accessible, in terms of narrative; and readable, in terms of chronological or thematic sequencing. It is important to note that unlike many methodological uses of the vignette format, the data presented here were not responses to hypothetical scenarios; they were, however, responses attempting to account for the participant's experience, or "accounts of practice" (Braun & Clarke, 2013).

Vignettes have been used as a qualitative method to elicit norms, responses to sensitive topics, common perceptions among disparate groups, and responses to topics that are difficult to articulate (Barter & Renold, 1999). Wade (1999), for example, used vignettes to explore the ethical frameworks of children and their relationship to their family; Neale's (1999) research into post-divorce family life used vignettes to explore young people's moral codes. Further, they have precedence in mobile technology studies, particularly in the discussions around privacy with mobile technology (Shilton & Martin, 2013), and in the changing nature of learning and pedagogical practices with the use of tablets (Wright, 2015 & Spencer et al., 2013). There is relevance in their use to the research being undertaken in this thesis. Yet, it is not being employed here as a methodological device, but rather a narrative one.

Returning to Braun & Clarke (2013), this study does indeed attempt to develop accounts of practice. Yet, the vignettes presented here are limited accounts of practice as they relate to specific technologies and specific communities. So while there is methodological application to the use of vignettes in this study, this was a *post facto* decision. Vignettes proved, ultimately, to be stylistic accessible mechanisms for presenting the data. They provided this author with the ability to

narratively present potentially disparate pieces of data in a coherent way anchored to a narrative provided by the participant themselves.

Please note that all participants were anonymized and all sensitive data in their interviews, mobile artifacts, and reflective prompts was removed, including their university affiliations. Further, all bolded sections are done so by this author. Each vignette begins with a summary analytical table which attempts to distill the analysis into its salient points, ahead of the vignette which expands on this summary.

7.2.1: Vignette #1: Jisun

Data	**Representative Evidence**	**Coherence**
Interview	Repeated reference throughout the interview to Jisun's affinity for professional community yet an adherence to disciplinary practice.	Jisun presents a narrative diachronicity by detailing her project-based participation; affinity expressed throughout the interview for her professional community.
Image	14 images submitted depicting various stages of a design project, including brainstorming, translating classification and design requirements into an initial mockup, and the final design.	The images, all sequentially labeled, depict a chronological progression through a design project. Site of Audiencing positions Jisun at center of this process. Little to no contrapuntal structure to upset overall visual coherence.

Video	Three short videos documenting a particular design project. The first (31 seconds) details the presentation of the mobile application design to her group members, while recording their discussion of the project or interacting with mobile technology.	Site of Audiencing again positions Jisun as active participant in this professional community. No overt contrapuntal evidence to support incoherence. Videos are soundtracked, demonstrating further adherence to professional practice.
Audio	(51 minutes, 41 seconds) An audio recording of a workshop her team conducted at a neighboring university.	Audio presents little capacity for spatial acoustic self-determination, yet group discussion strongly foregrounded. Little contrapuntal data suggesting incoherence of any sort.
Reflective Prompts	Five prompts: answers detail Jisun's understanding of professional practice, role of collaboration and media, and how professional and disciplinary practice overlap (through course requirements, for example).	Jisun coheres narrative further through prompts by discussing role of media in her design practice, confirming the role of mobile technology in this process, and her identity as a peripheral participant.
Overall	Jisun presents a coherent and detailed account of practice	Jisun presents the most coherent boundary trajectory of all the participants in her notable inbound

	consistent with a professional design community.	trajectory to the professional community and her adherence to her disciplinary community.

Table 14: Jisun's Summary Table

Jisun is a media studies major in her final year of graduate study at a programme at a highly respected university in Seoul. She presented throughout her data a considerable sophistication in her mobile technology use and in her articulation of that technology use. She has professed, explicitly, an adherence to both the academic practices of the discipline and to the professional practices consistent with media design. The data presented illustrates both these disciplinary and professional adherences. While much of the data suggested an overall boundary trajectory, one that adheres to both the disciplinary community of practice and to the professional community of practice, there was an overall greater emphasis on professional community participation. The majority of the data presented professional activity, with some shared practices across the different communities, and a lesser amount of data presented exclusively academic practices.

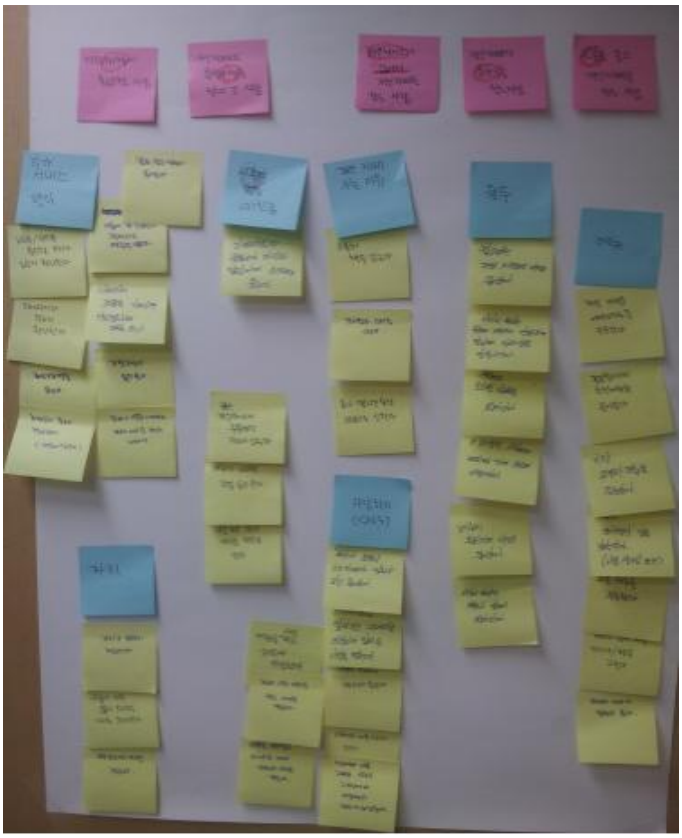


Figure 7: Jisun's brainstorming practices

Jisun presented in her data a process-orientation befitting the media design practices she was presenting. This was further cemented by her labeling system with the media data given a sequential number related to a specific activity; she explicitly provides chronological structure by presenting the dataset as a larger narrative of professional and disciplinary practice. She is keen to present this data sequentially, supporting this sequencing through extended passages in her interview and reflective prompts.

In the following, Jisun engages in a design practice which adheres to a professional community of practice, along with a culminating video presentation which overlaps between professional and disciplinary practice. In Figure 7, a collaborative design approach is presented, one quite common in professional media design (Klemmer et al., 2001). Jisun is documenting a collaborative design

activity where initial brainstorms are classified according to an emerging pattern. This emerging classification structure is to be used for a mobile application design tasked as part of both the formal curricula (assigned by the professor) and in response to a government contract (a project bid for by the professor in conjunction with the department). As such, interactions between academic and professional practice are frequent.

In Figure 8, Jisun documents the translation of this classification and design requirements into an initial mockup of the mobile interface. Jisun is foregrounding an adherence to professional practice. There is also a great emphasis on practices that span technologies. These include both mobile technologies (as the object of focus for this process as well as the data collection technology) and non-digital technologies (paper, post-its, scissors and other hallmarks of the design process). The process elicited in these images also suggest a maturity in professional practice, or the "creation of new stabilities in practices using new technologies is dependent upon the re-orderings and emergence of new knowledge and competence" (Ludvigsen et al., 2011). Jisun, with clarity and narrative comprehensiveness, is presenting an established practice from start to finish suggesting a stability in the professional community of practice itself.

Figure 8: Jisun's design practices

Figure 9 presents the technical and design practices at work in the professional, and to a lesser degree the disciplinary, community of practice. Jisun is demonstrating her technological and design capacity through these screenshots of the mobile applications generated from this design process. Jisun's identity as a member of this design community emerges through this "interplay of participation and reification" (Wenger, 2010). Such a strict adherence to the design process, and such an overt chronological narrative of data presenting that adherence, suggests that Jisun is presenting a considerable inbound trajectory towards this professional design community.

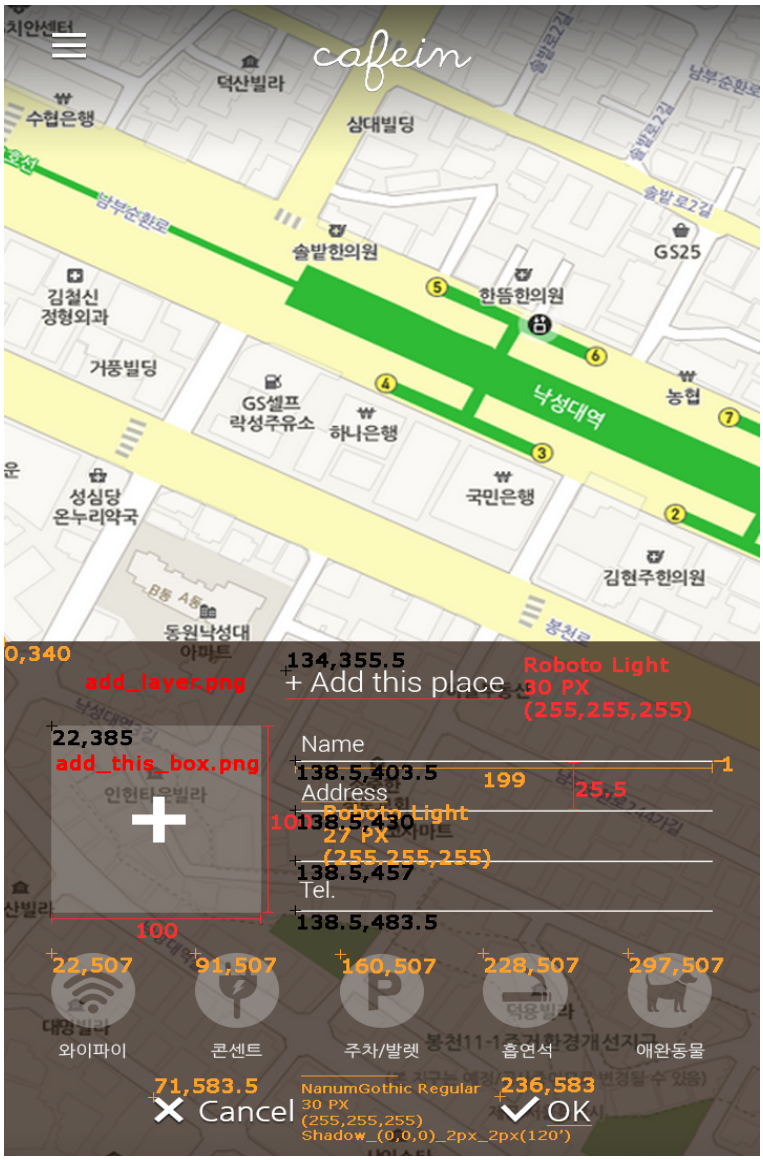


Figure 9: Jisun's design

The remaining data presented here suggests a different process or aspect of community participation, or even participation in another community altogether. In Figure 10, four still images from a video are presented. These images are arranged chronologically clockwise from top left and timestamps for each frame are provided; please note that this was done by this author and not Jisun herself. Jisun provides the presentation of the mobile application design to her group members, while recording the activities of these group members. Each is

performing an act of either discussing the project or interacting with mobile technology. The timestamps :12, :21 and :38, present a further act of presentation, a visual of her classmates' reacting to her team's mobile design, suggesting the movements along Jisun's nexus of multimemberships as she moved from one community of practice (professional) to another (disciplinary). There is a further act of dissemination in the audio data provided by Jisun, an aural account of a workshop her team conducted at a neighboring university. Jisun's narrative as such remains coherently bound to community practice, whether that be the disciplinary or professional community.

Figure 10: Jisun's presentation of her mobile design, or socialized practice

With both a chronological and narrative consistency, Jisun's next contributed mobile artifact, Figure 11, was an image of her presenting and socializing around the mobile design at a larger event in the Seoul area with her classmates. Jisun presents a design from storyboard to dissemination with convincing narrative adherence, all the while emphasizing both her place in this highly socialized series of practices. Highly socialized is critical here to engaging with Jisun's narrative as she does not present individualized activities at all in her data, in direct contrast to many of the subsequent vignettes presented in this chapter. Jisun sees her community identity (academic or professional) as being a socialized one, a point emphasized by the site of audiencing (Rose, 2012) of the images and video themselves. As audience, we are with Jisun amidst her group, discussing, iterating, and disseminating.

Figure 11: Broader dissemination and socialization around Jisun's design

Jisun renders this transition from professional practices (design, modeling, etc.) into shared or academic practices (discussion, presentation) and back again (workshop) in a deceptively seamless way. This is done primarily through her

narrative composition in labeling of the data into activity and through her detailed and linear presentation of the design and presentation process. However, this movement from professional to disciplinary community, despite the practice-sharing (Wenger, 2010) present between them, is a complex movement of liminality for the graduate student, one made more complex by an incoherent presentation of contact with academic staff in the data. Jisun presents little in her mobile artifacts that suggests a trusted member of either the professional or academic community (faculty) guided this activity, yet she points to the communication between faculty and students overall as being quite satisfactory:

> "Professors give advice/guidance according to the individual's working ability and interest…In my case the professor advised me to work on projects related to producing, that is because he know what I am interested in, what I want to do in the future and **my strong points as a designer**. The communication between professors and students is **very, very good and active**. I think one of the reasons I could easily adapt to the new environment in (university name hidden) was because of the active communication."

This is contrasted against Jisun's comments regarding more specific, classroom-based interaction with the faculty, which is presented as a procedural issue:

> "We sit in the class and wait for our professor to check our individual projects one by one. While waiting for my turn I work on my project or have a chat with my friends/boyfriend through LINE or Mypeople" (Author's Note: Line and Mypeople are both messaging applications).

Jisun presents this faculty contact as instructive relatively free flowing, interaction that does not present any articulated difficulty for Jisun in participating in either

community. While this does not suggest that students can be assumed to learn practices and adopt new identities simply through exposure to the environment (as Gourlay, 2009 argued against), the lack of faculty interaction in the data might be suggestive of a community member moving from the peripherals of practice (Lave & Wenger, 1991) into a fuller state of community membership. This is reinforced by Jisun's self-identification as a member of the professional design community ("my strong points as a designer"), suggesting an inbound trajectory that progresses from "peripheral participation to participation with the community" (Wenger, 1998). However, she adheres to disciplinary community practice as well, suggesting an overall boundary trajectory.

7.2.2: Vignette #2: Mia

Data	**Evidence**	**Coherence**
Interview	Repeated reference throughout the interview to Mia's adherence and affinity with the professional community yet an adherence to disciplinary practice. Professional practice foregrounded creativity and resilience as core traits.	Mia presents a narrative diachronicity by detailing her project-based participation; affinity expressed throughout the interview for professional community. Tacit elements of community practice and potential inhibitors to community participation surfaced.
Image	Nine images depicting a variety of professional practices: screenshots of her workstations or views from mobile devices, socialized	Less chronological than Jisun, yet still ardently thematic. Site of audiencing both individualized and socialized, suggesting the range of practices needed for participation.

	activity, presentations, and study spaces.	Expressive content suggests affinity for professional community. Contrapuntal evidence limited in imagery to contrast between individualized and socialized activity.
Video	(3 minutes 28 seconds) a video depicting blocking, the checking of the flow of actors before filming a group project.	Coherence throughout the video on documenting one professional practice. No overt contrapuntal evidence to suggest incoherence.
Audio	Two audio recordings: the first (70 seconds) of her discussion with her group members about filming locations; the second (73 seconds) a discussion with her professor in class	Coherent presentation of a collaborative practice and formal disciplinary activity. Contrapuntal evidence limited to critical appraisal or disagreements.
Reflective Prompts	Responses to five prompts discusses various stages of the larger project, focusing in particular on writing practices: initial notes, drafts of her filming outline, a second version of this same outline.	Mia emphasizes the role of writing, foregrounding creativity and individualized practice. This coheres with the interview, and much (but not all) of the mobile artifact data.

Overall	A coherent and ultimately chronological account. Incoherency suggested by contrast between individualized and socialized practices, but not explicit as Mia sees practices as consistent with professional participation.	Mia presents an inbound trajectory towards her professional community, and a boundary trajectory towards her disciplinary community.

Table 15: Mia's Summary Table

Mia is an art history major with a focus in film studies in her final year of graduate study at a university in Seoul. Mia came to graduate school as a history and journalism undergraduate and reflected on her lack of enthusiasm for either of these two disciplines, which culminated in her pursuit of art history and film studies. As such, she presents a convincing inbound trajectory towards film studies, with boundary trajectories to the academic communities contained therein. Like Jisun, she navigates these communities with a confidence and use of the shared practices overlapping both communities (Wenger, 2010); like Jisun, there is a pronounced emphasis in the data on the practices involved. However, unlike Jisun, Mia exhibits considerable evidence to foreground creativity, competitiveness, and resilience in terms of community practice as critical to maintaining or establishing her membership in this community. As such, the pivot on which this narrative is constructed differs from Jisun's.

Like Jisun, Mia presents an organizing concept throughout her data. She chose to present all her data through the sequencing of a group assignment which required her and her group to create a short film related to the modern adaptation of mythology. To begin, Mia establishes her identity as someone engaged in a

creative and competitive community, a narrative that begins to establish her trajectory.

> "However, my ideal goal is to write a really good scenario, a long piece and make my debut as a director. Once you go to (name of university hidden), you get to know a lot of people working in this field so everyone here can pull strings if they want to. So in order to compete with my colleagues, I have to be very skilled. There are lots of graduates who are still writing scenarios, expecting to debut as a movie director someday. I would also have to try my best to write a really good piece."

She then goes on to establish the role of criticism in community practice, which further advances the community traits of competitiveness and resilience. While the role of critical feedback was implicit in Jisun's narrative (through group presentations, workshops, faculty checking their work), Mia foregrounds criticism much more explicitly. In the following passage, she also foregrounds community membership through the contrast of age ("I am the youngest among the group", etc.), which draws on hierarchical age constructs specific to South Korea. Mia is navigating the contours of community practice despite her lack of experience and her age, which all suggest an accepted practice within the South Korean context (the senior-junior relationship introduced earlier in this thesis), a practice that Mia is deviating from to establish her membership. Mia is establishing a narrative of identity within the community, one that emphasizes resilience despite the criticism and despite the age and professional differences that would suggest to her an inferior position within this community.

> "Their criticism really helps a lot. I am the youngest among the group; nearly all my colleagues are over 30. They have a lot of experience working….and also they have more experience in making movies than me. I

> am the only one in my school that came in right after graduating from university."

Mia establishes both the beginning and end points of the trajectory in these passages: ultimately desiring to become a full member of the film community, while establishing her current position as the youngest and least experienced of that community. Mia, like Jisun, coherently emphasizes the importance of process in this community and presents data to support this emphasis on process. She establishes this process, and the role of mobile technology in mediating this process, early in her narrative. Mia presents an example of her daily routine in the following passage, one that is supported by the aural, visual, and video data she provides. Please note that the bolded sections in the following are from this author.

> "I wake up to my alarm and take the subway to school. We normally **have to read scenarios that other students wrote so I read it again on my way to school** using the Naver Café app on my phone. In class, for example directing class, the presenter turns on a movie and the other students read the report that the presenter uploaded…while watching. Usually the report is about screen shots of the movie scenes and the presenter's opinion on each scene. After class **I do my assignments**. If I have to write a scenario or a report, I go to the library and **write with my laptop**.
>
> Nearly all students use Mac because we have to use a program called 'final cut' to make a movie **which of course**, only runs on Mac. Facebook is convenient because first, it is compatible and second because they provide an alarm whenever something new is uploaded…

> When I have to **share materials with teammates** we also use Naver Line. I do my assignments until it gets dark and before I go home **I gather with my colleagues** and share criticism about each other's scenarios. It is like a small study group where we talk about each other's works. **Our school only requires us** to make short films **but we have to make long period films in order to make a debut as a movie director**. Also **there are not many classes** that teach us how to write long scenarios. That is why we made a study group: to help one another."

This account of her daily activity is revealing in a number of ways. Mia repeatedly contrasts her affinity for her filmmaking community at the expense of the academic one ("Our school only requires us…"; "there are not many classes", "we made a study group" to account for this lack); this creation of an independent study group demonstrates, again, her foregrounding of resilience as a key community trait. There is a reference to colleagues instead of classmates, suggesting her identity as a practitioner in this filmmaking community. There is even a technological nod to familiarity ("which of course, only runs on Mac"), presented as an obvious fact for those within this community.

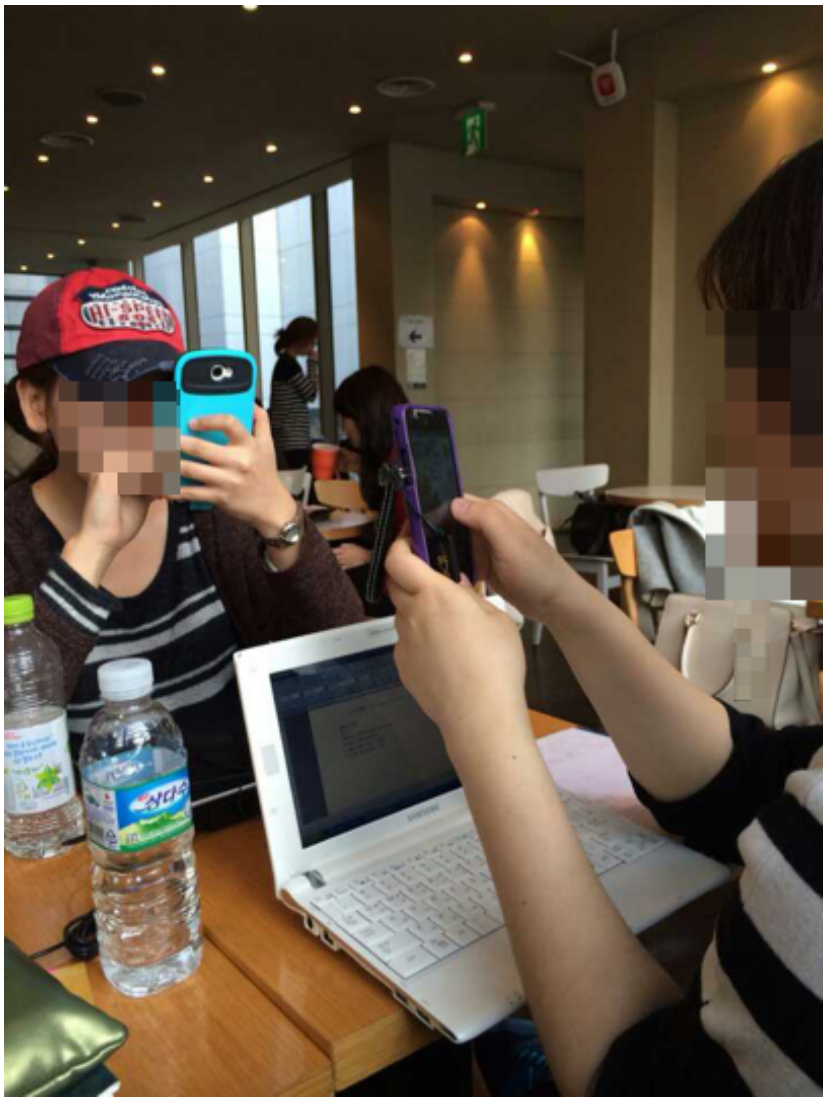


Figure 12: Mia's collaborative process

This narrative coheres with the mobile artifact data presented by Mia. In the following, we see the process of filmmaking from drafting a story, to team selection, to choosing a location, to blocking and presenting the film. Mia correlates this activity with passages from her interview:

> "After I write a scenario, I contact students from Sound and Visual majors to make a team. Then we discuss about how to make the scenario in to a real

movie. We narrow the location and actors. **It is all teamwork**. **This is a voluntary process**; it is not an assignment for class."

Again, Mia emphasizes the contrast between this professional community and the academic one through her emphasis on process, resilience, and socialization ("this is a voluntary process" and "it is all teamwork"). In Figure 12, the beginnings stages of this activity are presented as the team meets to discuss the drafted scenario, all the while maintaining communication to the larger community through mobile technology.

Figure 13: Managing membership through mobile technology

In Figure 13, there is a presentation of how much of this communication is managed through mobile technology. In these discussions through a mobile application, Mia presents the process of outlining the steps necessary to complete the film, an exchange of the drafted scenario and feedback surrounding this scenario. The audio data provided by Mia further establishes the collaborative

project as they attempt to identify a suitable location for the film shoot. The language and tone of the audio suggest a more contested environment, where feedback and criticism is given freely and directly, a suggested instance of professional practice either aligning with (assuming the criticism emerges from an older group member) or superseding sociocultural practice (if the criticism were exchanged freely regardless of age or gender hierarchies).

Figure 14: Mia presenting practices aligned with professional community practice

The video (Figure 14) provided by Mia, presented by this author as a series of stills moving clockwise from the upper left, demonstrate Mia's understanding of the blocking process, a coordination of the spatial arrangements of the scene made on location. Mia, in a community focused on methods, process, and output (the

finished film), emphasizes a practice that positions her as a community member. Like Jisun, Mia presents data to suggest that she is engaged in a boundary trajectory towards the disciplinary community, one that shares several of the same practices as the professional filmmaking community, the sort of practice sharing at the nexus of multimembership as discussed by Wenger (2010).

Like Jisun, there is in Figure 15 a presentation scenario where Mia is expected to present her completed film and receive feedback from other both faculty and other graduate students, a further node to the theme of resiliency running throughout her narrative. Her audio data supports this as Mia is engaged in discussion with the professor in class, receiving feedback and defending her film. Unlike Jisun, the professor's feedback is emphasized more, suggesting it is less a procedural formality and more aligned with the feedback practices that she would expect to receive in her professional filmmaking community. As foregrounded in the audio and in several of the visuals, there is value given to the faculty feedback above and beyond the formality of the formal curriculum. Yet, Mia's identity as a community member, despite the boundary trajectory she exhibits towards the disciplinary community, is firmly inbound towards the professional community.

Figure 15: Mia's presentation process; exposed and resilient to open feedback and scrutiny

7.2.3: Vignette #3: Jisoo

Data	**Evidence**	**Coherence**
Interview	Repeated reference throughout the interview to Jisoo's aversion to socialized activity and mobile technology for formal participation. Jisoo presents a narrative of selective subversion of sociocultural practices consistent with Korean higher	The narrative diachronicity is coherent in that Jisoo repeatedly draws attention to non-digital communication and individualized practice as a means of disciplinary participation.

	education, yet presents affinity for the disciplinary community.	
Image	Nine images depicting a mix of individualized practices (five images) and socialized practice (four images).	Although presenting an aversion to mobile technology, Jisoo foregrounds it through the site of audiencing of individualized practice. Remaining images depict individualized, non-technological space. Little to no expressive content aside from intimacy of private space.
Video	One video (5 minutes 55 seconds) of Jisoo working quietly at her desk highlighting paper reports or a textbook. No evidence of digital technology (aside from site of production), no evidence of socialized activity.	The site of audiencing positions the audience askew from the activity, little to no contrapuntal data to suggest incoherence in this presentation and its foregrounding of individualized practice.
Audio	Two audio recordings: the first depicts individualized study in a public space (6 minutes 30 seconds); the second (12 minutes 20 seconds) a recording of a lecture without interruption.	The audio data presents little evidence of spatial acoustic self-determination as ambient noise is backgrounded; some contrapuntal data as ambient audio in the first recording is juxtaposed against the solitude presented in other modes.

Reflective Prompts	Five questions detailing Jisoo's perceived lack of mobile technology use, her preference for individualized activity, and media.	The narrative is partially reinforced in the prompts; Jisoo becomes aware of her lack of mobile technology use, suggesting it was tacit in the data to that point.
Overall	A relatively coherent narrative depicting community participation as individualized practice. Slight incoherency suggested by subversion of mobile technology use and the sociocultural practices embedded therein, but inconclusive as to whether that is personal predilection (suggested) or disciplinary adherence (less likely).	Jisoo presents an overall inbound trajectory towards the disciplinary community, and a subversion to or neglect of the more socialized practices associated with South Korean sociocultural norms of interaction.

Table 16: Jisoo's Summary Table

Jisoo is a second year graduate student in Korean Studies, an interdisciplinary offering combining elements of art history, cultural studies, literature, and history. She studies at a very large, very prestigious university in Seoul. In the presentation of data as follows, Jisoo suggests elements of an outbound trajectory towards specific aspects of her disciplinary community, as well as a boundary trajectory towards other communities. Jisoo presents some subversion towards accepted practices within her disciplinary community, practices consistent with South Korean socialized practice. This is manifested in her aversion to particular aspects

of mobile technology and the commonly used applications contained therein that benefit socialization. Jisoo also presents a coherent identity throughout the data, with themes from the interview and reflective prompts finding corresponding representation in the media data (audio, visual, and video).

From the very onset of her narrative data, Jisoo positions herself askew in relation to the socialized aspects of community, emphasizing her creative routines as solitary endeavors.

> "When **good ideas come up, I write them down using a memo app** on my phone. Also when I am short of time **I brainstorm even when walking**."

The solitary aspects of Jisoo's disciplinary interaction as a graduate student are made evident in her mobile artifact data. Jisoo, almost uniquely amongst all the participants, contributed no visual data that presented herself in relation with other people in some socialized capacity. None of the visual data presents people of any sort except on the peripheries or out of frame; this includes Jisoo herself, who is merely implied in the site of audiencing (Rose, 2012) as the photographer/recorder, aside from the occasional hand from off-screen. A representative example of this visual data is found in Figure 16, a solitary study space which also foregrounds a secondary theme in her data: the absence of mobile technology as an intentional practice.

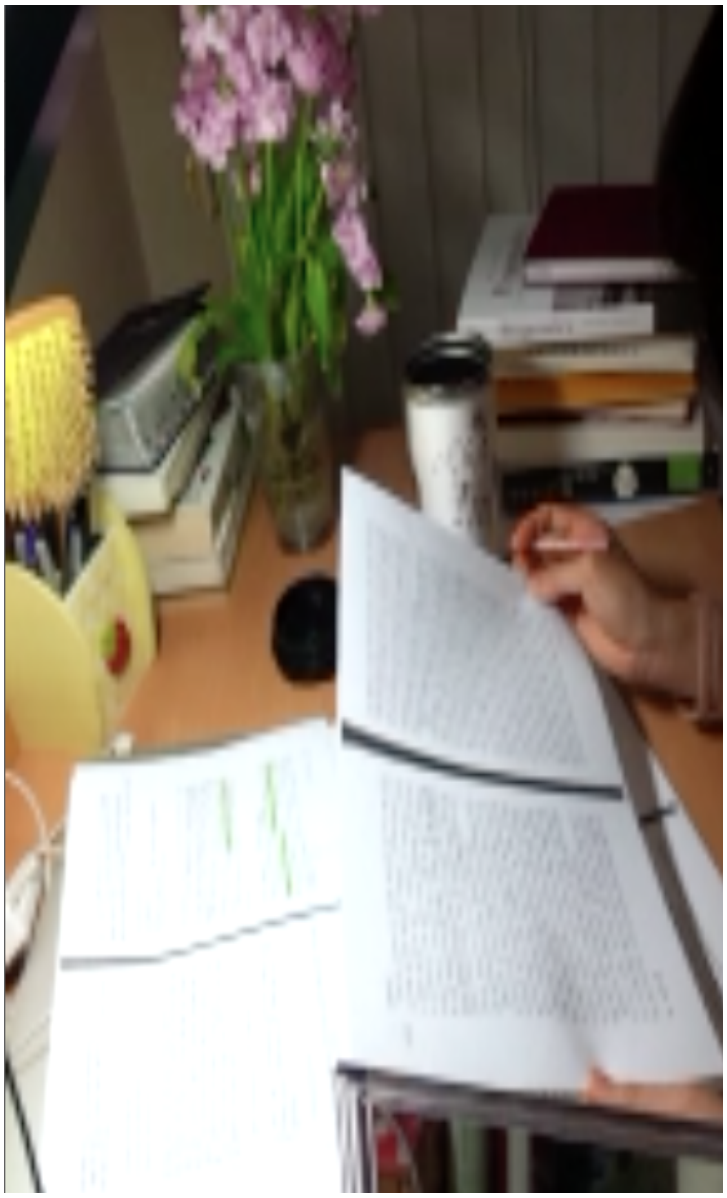


Figure 16: Jisoo's solitary studiousness; an emphasis on individualized practice

Jisoo repeatedly pointed to instances where the lack of digital technology was preferable, suggesting this was more than a temporary misgiving, or general predilection. There is evidence of this in the following passage:

> "I remember one interesting class where I told the students to stick 'post-it's, with questions written on it, on to tables and chairs in the classroom. Surprisingly, they chose to stick their 'post-it on to places I could never

> have imagined, like on walls or behind objects and so on. Then, the students with no idea of where the 'post-it's were actually found every piece of post-it that the previous class had hid. This incident made me think about **'peer knowledge' and about the uniqueness of lectures not using digital equipment**. **Digital still feels like a one-off thing to me."**

In this instance, Jisoo emphasizes the advantageous aspects of a disciplinary engagement not mediated by mobile or digital technology ("the uniqueness of lectures not using digital equipment"), ultimately drawing a conclusion that can be foregrounded as a theme ("digital still feels like a one-off thing to me"). It is peripheral to either her identity, her community practice, or both.

Yet this aversion or resistance that Jisoo has presented in relation to her technology use is not uniform. It does not stretch into the individualized and informal aspects of learning of mobile technology use as characterized by Park (2011). Jisoo uses mobile technology often to mediate her learning experiences in these informal and individualized spaces, as made evident in the following passage:

> "I don't have much chance to experience nature. So I like going to places where I can be among nature during my vacation. However, during my trips I try to take my mind off studies so I don't really think about my major there.
>
> After I began graduate school, I have been around trees a lot. **The campus is huge and there are a lot of parks and trees. At first I didn't like my campus because I felt like it was too inhuman. Calling the buildings by number and taking the shuttle bus to go to other classrooms seemed strange. I tried to get accustomed to their ways and began taking photos of**

> **the campus. It is important that I feel comfortable with the environment I am in because I tend to get stressed in unfamiliar places.** For example, once I find my friendly road, café or spot in the library, I stick to it. **For me to get comfortable, I try to take more picture and videos of the new environment and try to make it seem more meaningful. Mobile media plays a big role there. After I take picture of the trees and parks in our campus, I share it with my friends."**

Jisoo presented an image emerging as a result of this individualized orientation practice using mobile technology, a seemingly simple presentation of a bench arrayed with studious artifacts (Figure 17). There are pen and papers, coffee, the trees which Jisoo draws attention to, all within the "strange" and "unfamiliar" campus of her graduate study. Jisoo, in this practice, relies on mobile technology and her informal socialized community to orient herself to the possibility of disciplinary engagement. Mobile technology assists in making the "strange", "stressed", and "inhuman" campus "more meaningful", yet is positioned in service of the studious and decidedly non-digital elements of community practice: pen and paper.

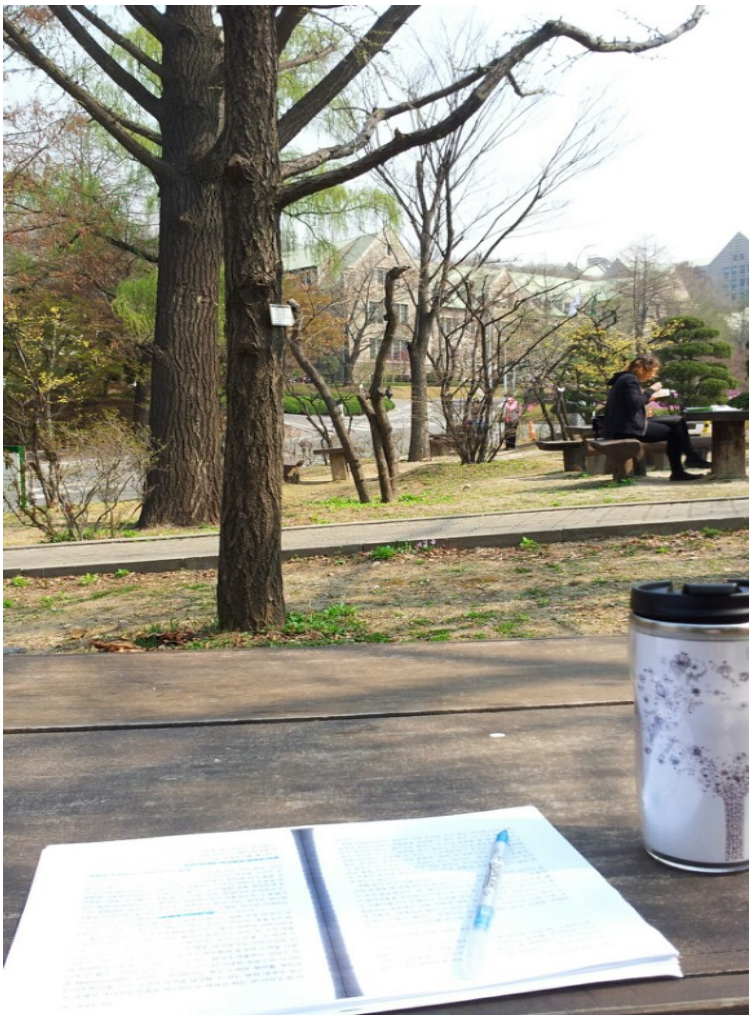


Figure 17: Jisoo's orientation practice of making the "inhuman" less so; mobile technology serves the studious presentation

While contextually emphasizing the role of mobile technology as a humanizing agent, and therefore as a precursor to disciplinary participation, when seen in coherence with the interview passage the image reinforces the secondary role of mobile technology in the more formal aspects of disciplinary community engagement. The site of audiencing and site of the image itself (Rose, 2012), both suggest that participation in this disciplinary, formal, academic community is one best managed without digital technology and without a socialized community to support the graduate student. This is reinforced by the two pieces of aural data

submitted by Jisoo. In the first recording, there is ambient sound in a public place. There are conversations on the peripheries, the movement of chairs, a constant din. That is contrasted against the sporadic foregrounded sound of keystrokes on a computer, presumably the sound of Jisoo typing herself. There is no foregrounded discussion of any sort, suggesting Jisoo is alone.

On the surface, this presents a slightly incoherent sounded environment (an example of contrapuntal sound via Monaco, 2009) from the seemingly serene park bench on campus from Figure 17, but one consistent with Jisoo's emphasis on the individualized aspects of community engagement. She is not participating in the socialized conventions of academic practice, opting for a more individualized approach. The audio presents both simultaneously: the foregrounded aspects of personal sound space (Fluegge, 2011), suggesting individualized practice; and the backgrounded sonic commons (2011), suggesting the socialized aspects of community participation. Jisoo presents a contested sound space, but emphasizes her preference for the individualized aspects of this space with a relative coherence across the data.

The second audio recording presents both themes (individualized practice and an aversion to mobile technology use) in a more formal academic setting. The audio recording presents a classroom lecture, a lecture uninterrupted by any discussion between students and the faculty. The only sound in the foreground is presumably Jisoo configuring the mobile device used to record the lecture. The file name that Jisoo used to submit this data contextualizes its significance (I-record-when-I-can't-concentrate-or-have-to-go-to-the-washroom.m4a). Jisoo emphasizes the role of mobile technology in this process by positioning it solely as a recording device. More importantly for the purposes of determining a particular community trajectory is the nature and content of the recording itself. To begin, it is a 12

minute, uninterrupted recording of a lecture. There is no audible student interaction to be heard, only the sound of the professor lecturing. There is no "mutual engagement involving expert modeling of community practices", nor any "mutual engagement in the maintenance of the community" (Wenger, 1998 critiqued by Gourlay, 2009 in relation to academic writing). There is Jisoo's positioning of herself amidst this lecture in the implicit: if she uses the mobile technology to record when she "can't concentrate" or when she has "to go to the washroom", then this suggests that she is note-taking otherwise.

The lecture format presented here, along with the other data presented in this vignette, begin to map a learning trajectory, if not the origin of that trajectory, in relation to the disciplinary community. It is unclear whether Jisoo is exhibiting these individualized practices in response to the tacit structure put forth by the discipline, whether she is drawn to this individualized structure as a result of her personal predilections, or some combination thereof. What is known is that Jisoo's participation in this community is *propagated by* and *rewarded through* her individualized practice. Her eschewing of mobile technology except for select cases involving orientation or recording is, paradoxically, a stated act of emphasizing face to face interaction ("'peer knowledge and about the uniqueness of lectures not using digital equipment. Digital still feels like a one-off thing to me"), yet still not presenting evidence of actively participating in these socialized practices. So there is an overall inbound trajectory towards the disciplinary community, and a subversion to or neglect of the more socialized practices associated with South Korean sociocultural norms of interaction.

7.2.4: Vignette #4: Kyungsook

Data	**Evidence**	**Coherence**

Interview	Narrative moves between depictions of disciplinary practice and Kyungsook's informal, socialized interaction, with the former seemingly exerting greater affinity.	Significant attention drawn to limited faculty interaction. Narrative emphasis on importance of material artifacts and practices as opposed to technological practices. General adherence to disciplinary practice presented throughout, yet backgrounded agency in her role as community participant.
Image	Seven images depicting a mix of formal, informal, individualized and socialized practices. General emphasis on individualized and formal practice.	Site of audiencing positions audience as participant, site of image itself emphasizes practice. Data presented generally parallel activity. Expressive content in the imagery suggests affinity for material practices.
Video	Two videos: the first (64 seconds) a private study space with digital technology backgrounded and books and markers highlighted; the second (again 64 seconds) demonstrating preparation for an upcoming presentation.	Site of audiencing positions positions audience as participant, site of image emphasizes individualized practice. Parallel activity presented throughout the video with little contrapuntal suggestion of any sort.

	Emphasis in videos decidedly on formal, individualized practice.	
Audio	One audio recording (2 minutes 13 seconds) depicting Kyungsook's study space in a loud coffee shop. Ambient sounds of the public space with little to no audio data from Kyungsook herself.	Some contrapuntal evidence in terms of backgrounded aural discord as opposed to the clarity and relative privacy of the video. Stated preference towards sounded spaces.
Reflective Prompts	5 reflective prompts discussing role of mobile technology on the commute and for learning, public spaces and sound.	Prompts confirmed themes of formal and individualized practice, & the supplementary role of mobile technology in serving these practices.
Overall	A less coherent narrative in terms of overt affinity, yet one that proves coherent as narrative. Kyungsook generally foregrounds formal disciplinary practice, yet surfaces secondary allegiances to socialized communities.	Kyungsook is suggesting an overall inbound trajectory to the disciplinary community and a boundary trajectory to the professional community, with trajectories influenced in part by informal socialized practices.

Table 17: Kyungsook's Summary Table

Kyungsook is a first year graduate student at a private university in Seoul with a particular focus on the humanities. She is a media studies major, but expressed a considerable interest in art history as well. She presents a familiar inbound or boundary trajectory to Jisun and Mia in regards to her professional design

community, and a token, or lesser, allegiance to her disciplinary community. Kyungsook does not present any overt outbound trajectory, or subversion of community practice, but her data suggests that her trajectory is governed more by social, informal practices than by the shared practices and identities of any disciplinary or professional community of practice.

She is, however, attentive to the design projects she is attached to in keeping with her coursework. These projects are similar to the ones that Jisun describes in that they are managed by faculty who assign graduate students to complete them. The data she presents suggests that this attentiveness is not due to any particular connection to the faculty assigning the project:

> "**I am not close to my professor**, not really. I can say we are close when we are working on the same project or so on. Our relationship is more **'task-oriented'**. I use emails when sending files to professors, and when I have questions or want to appoint them for a meeting, I send them a text message or simply call."

Kyungsook broaches the project orientation process in the following passage:

> "At the beginning of each semester, professor gives us the big topic. And then he says it would be preferred if we could narrow it down to 'mobile', 'pc' or 'applications'. Then students decide their specific topic according to their interest. When the topic is **not very meaningful**, the professor suggests him or her to find a new one."

Faculty, as insider members of the community of practice, serve more as tacit gatekeepers (suggestions when topics aren't 'meaningful') or instigators of activity

(projects), echoing Lea's (2005 via Gourlay, 2009) critique of Wenger's (1998) positioning of communities of practice as involving "shared enterprise, shared repertoire of norms, techniques and conventions, and mutual engagement in the maintenance of the community." As Lea (2005) suggests, in the student/faculty dynamic in higher education, there is little sharing of the repertoire of the community, nor in its maintenance. This is presented in Kyungsook's passages in their detachment from faculty as insider members of the community; she refers to faculty casually through technology ("I send them a text message or simply call"), correctively ("when the topic is not very meaningful, the professor suggests him or her to find a new one"), and with a degree of emotional detachment ("I am not close to my professor, not really").

Kyungsook engages in the practices of the community as modeled by her peers, fellow peripheral participants, rather than insider members of the community as represented by faculty. Yet engage in these practices Kyungsook does, articulating a variety of learning, design, and media practices also exhibited by Jisun and Mia. The uniqueness of Kyungsook's presentation is her presentation of the socialized dynamic of the practices and the technology use that accompanied these practices. The following passages establishes the project through which much of Kyungsook's narrative unfolded:

> "I had to do a research on 'Seoul, the street I want to walk in (author's note: a project assigned by their instructor). As a team we chose one street from the website and observed it from a nearby café. Also we installed camera nearby and videotaped the people passing by. For example, we found that people were looking around when they reach the crossroad nearby. By looking at that, we could make an assumption that the signs were not put up appropriately."

Kyungsook's goes on to detail the media data collected as a result of this project, as well an articulation of the practices used to collect this data. Figure 18 provides a screenshot of the completed project: a mapping tool used to demonstrate the effectiveness of signs in a given area as part of a larger municipal effort.

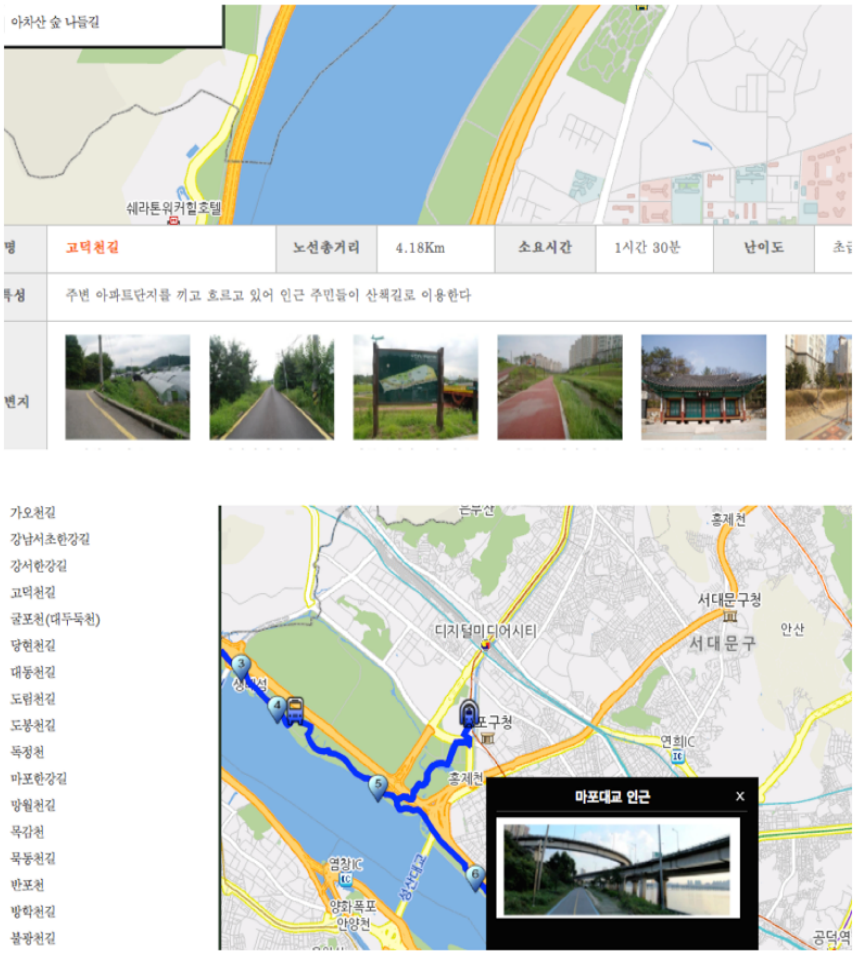


Figure 18: Kyungsook's completed project, or tacit adherence to community practice

Much of this data echoes Mia's presentation of video production techniques (blocking, for example), but Kyungsook differs in her presentation of data in the centrality of the socialized experience in her narrative. Her presentation of self is

as a member of the group ("as a team", repeated mentions of "we") or in the abstract ("students decide…"), not as an individual ("I" appears very rarely throughout her data). When Kyungsook refers to herself directly, it is generally clearly situated in an informal, socialized setting, such as in the following passage:

> "If I have time before class, I chat with my friends via KakaoTalk, surf the internet with my laptop. In class I usually record lectures that are important. I prefer recording to writing things down."

Even when referring to practices associated with her community (disciplinary or professional), she foregrounds the socialization of the relationship, as in the following passage:

> "I usually interview my friends or colleagues when I need to. Because there are people in their 20s, 30s, and even 40s here in graduate school, I can get a wide range of interviewees."

In this passage, Kyungsook establishes a connection between socialized practices (interviewing friends or colleagues) and community practices (sampling concerns as made evident in her reference to participants from obtaining "a wide range of interviewees").

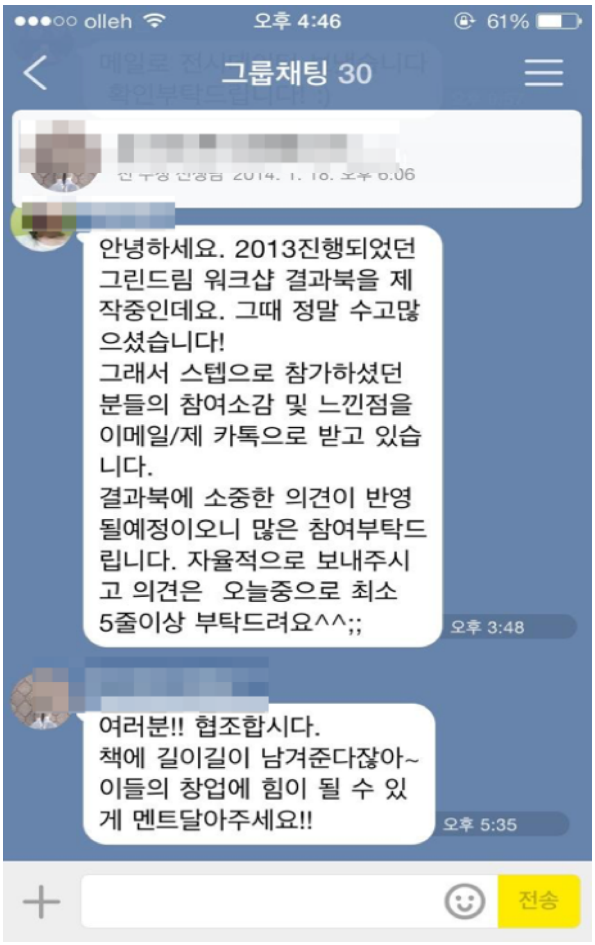


Figure 19: Kyungsook's socialized adherence evidenced through mobile messaging

This socialized aspect of community interaction is further foregrounded by Kyungsook's mobile artifact data. In Figure 19, there is one of several screenshots submitted by Kyungsook detailing the socialized nature of her disciplinary participation. This screenshot from KakaoTalk was one of six submitted by Kyungsook (as compared to three other images detailing the data collection and project website). It details a group discussion surrounding a 'Green Dream Workshop 2013', where the group leader is asking group members to hand in their feedback and comments about the workshop via email or KakaoTalk.

What becomes most revealing is how little Kyungsook herself features in these discussions, choosing to present both the site of audiencing and the image itself

(Rose, 2012) simultaneously suggesting her backgrounded role as a group member. This could be partly due to personal predilections, or due to her status as a first year graduate student and therefore beholden to her "seniors", a status bound by South Korean hierarchical sociocultural practices. If this presentation is being influenced by the South Korean practices of communication, then evidence is presented of how "new technology is in fact perceived and consumed through local filters including social relations and norms", a process of 'retraditionalizing" (Yoon, 2003).

Kyungsook might be slotting into a role in the group that she would adopt even if mobile technology were not involved. This suggestion in the data is reinforced in other screenshots from KakaoTalk, which feature Kyungsook prominently engaged in discussion outside the formality of disciplinary participation. When chatting with friends, she features prominently as a foregrounded member of the discussion; when involved in disciplinary (particularly socialized) activity, Kyungsook is content to fulfill a supporting, almost anonymous role within the group. As such, overall Kyungsook is suggesting a boundary trajectory to both the disciplinary and professional communities, a boundary trajectory that is propelled by informal socialized practice.

7.2.5: Vignette #5: Mihyeon

Data	**Evidence**	**Coherence**
Interview	Narrative moves between depictions of professional practices and Mihyeon's informal, socialized interaction, with the	The narrative diachronicity is coherent in that Mihyeon repeatedly draws attention to informal socialized practice and an overall adherence to field work.

	latter seemingly exerting greater affinity.	
Image	11 images depicting a mix of formal, informal, individualized and socialized practices. General emphasis on public space and field work.	Site of audiencing positions audience as participant, site of image itself emphasizes practice. Data presented generally parallel activity, but some contrapuntal position suggested by imagery depicting individualized activity vs. socialized activity. Expressive content in the imagery suggests affinity for field work.
Video	One video (64 seconds) of private study space. Emphasis in the video is decidedly on individualized and formal practice (writing/reviewing documents).	Site of audiencing positions audience as participant, site of image emphasizes individualized practice. Parallel activity presented throughout the video with little contrapuntal suggestion of any sort.
Audio	Two audio recordings: the first (4 minutes 51 seconds) socialized activity around a group project with backgrounded typing noises; the second (2 minutes 52 seconds) continuing the same discussion.	Although parallel within the mode (audio) and the narrative overall, some contrapuntal evidence here with the video in emphasis on socialized practice.
Reflective Prompts	Five reflective prompts discussing role of field work, public space, design practices, mobile technology use, and community	These prompts confirmed themes emerging from data in terms of individualized practice and a general predilection towards informal,

	participation in Mihyeon's narrative.	socialized interaction over formal participation.
Overall	A coherent and multidirectional narrative depicting community participation as being partially engineered, or motivated by, informal socialized participation. A greater emphasis on field work and their attendant practices, which appears to move from the formal to the informal as she documents various locations on her commute.	Mihyeon is suggesting a boundary trajectory to both the disciplinary and professional communities, a boundary trajectory that is propelled by informal socialized practice.

Table 18: Mihyeon's Summary Table

Mihyeon is a first year graduate student majoring in history at a prestigious university in Seoul. While reiterating many of the themes emerging from Kyungsook's vignette, particularly the importance of socialized activity in disciplinary participation, Mihyeon broadens this socialized approach by developing on the importance of field activity in the disciplinary community. Mihyeon also presents no evidence to suggest a boundary trajectory, or a secondary trajectory of any sort, that might compete with her inbound trajectory towards the disciplinary community of practice. There is no evidence of professional communities that might contest her inbound trajectory, as was the case with many of the art history and media studies participants.

Mihyeon began with repeated references to the importance of field activity in her major, one of which is provided in the following passage:

> "We learn a lot of theory but **the most important this is to make field investigations**. We go on at least one field investigation every semester. I think I went to every important historical site except Jeju (author's note: island off the coast of southern Korea). **Looking at pictures is important too but we also have to see the real thing**. I took classes on paintings and handicraft last semester, I find everything interesting. However, I don't like pottery. It is too complicated."

Mihyeon is exhibiting, or paying service to, the importance of fieldwork in her discipline, as well as juxtaposing the centrality of immediate over digital representations of the same artifacts ("Looking at pictures is important too, but we also have to see the real thing"). This suggests that Mihyeon is maintaining a community practice (presumably modeled or articulated by the professor) of field site investigation, as well as implicitly presenting a possible aversion to using technology in this process (again, possibly modeled by the professor). Mihyeon goes on to to provide evidence that mobile technology can serve a supplementary role in this process, however, as a tool for further *in situ* investigation:

> "I think the most important things is that they allow us to **expand small picture and look at it more closely**. Some art paintings are the size of my hand, some are bigger than 2meters. With the **help of mobile devices I can enlarge the pictures with my 2 fingers and look more closely at the part I want to study**. Looking at pictures is as important as looking at it in person. When looking at them through pictures, **I can look at the paintings more carefully**. In that case I can learn about them through pictures."

So, in this instance, Mihyeon presents mobile technology as a means of supplementing the core community practice of fieldwork. Mihyeon presents no evidence to suggest that she is rejecting, adapting, or subverting fieldwork

practice in any way. Indeed, quite the opposite is true; it is foregrounded throughout her interview and even in her mobile artifact data. However, she goes on to suggest that this adherence to fieldwork has a motivation in socialization as well as those adhering to the community practices associated with history.

> "History majors go on field investigations once every semester. Students who are in charge of planning make the schedule and we follow it. **Usually I don't have a say in it.** This time we are going on the field investigation with Western history majors… **Since we go on field trips together, my colleagues and I are really close. It is really fun looking at the stars at night while talking with my colleagues**."

She expanded on the importance of fieldwork, and the role of socialization within that fieldwork, later in the same interview.

> "I am going on a field trip next week. History majors go one official field trip every semester. Other field trips are planned by individuals. There are many museums and pagodas in the suburbs. **When we go on field trips together, it is more fun and educational because we have discussions about the pieces, exchanging each other's opinion**. For example, last time we had a discussion about whether the pagoda we are looking at is from the 18th century or the 19th century. **Those discussions really help my study** because I get to learn about facts and opinions I have never thought of before. **However, I don't really write them down."**

Mihyeon presents the importance of socialization in her learning process, suggesting how it improves her study as an end in itself (suggested by the "I don't really write them down"). The audio data supports the importance of this socialization and emphasizes it further through the projection of a foregrounded

intimacy. There are two students, one of whom is Mihyeon herself, discussing a project and typing on the computer. There are no other background sounds except the shuffling of papers, a personal sound space (Fluegge, 2011) uninterrupted by the encroachment of ambient noise. There is a particular intimacy in the tone and informality of the speakers. Yet, Mihyeon, as in her interview and other media data, presents a coherent and simultaneous adherence to both these socialized practices and the community practices. In the audio, they are discussing a project for their course (4:52) and doing so with considerable focus; the second audio recording (2:52) extends this discussion further. In total, there are approximately 10 minutes of recorded audio foregrounding the importance of socialization in Mihyeon's learning process, socialization that is explicitly tied to topics of community interest.

Mihyeon presents the importance of socialized practices in her learning process throughout her data, consistently aligning these socialized practices with her disciplinary participation. In the following composite image (Figure 20), there is a particular emphasis on socialized practice as Mihyeon and her colleagues move brainstormed ideas and initial findings from collected data into categories. While it remains incongruous in relation to her study of history (as it is presenting a design project) suggesting perhaps a departure from the inbound trajectory evidenced throughout the rest of her data, it does again foreground the importance of socialized practice.

Mihyeon has aligned her disciplinary participation through the conduit of socialized practice, exhibiting none of the tension often found as peripheral participants (Lave & Wenger, 1991) move from the peripheries along an inbound trajectory. Mihyeon articulates no anxiety in her disciplinary engagements, no stress as a result of wading through tacit and contested practices, no apparent

fatigue as a result of “the work of reconciliation necessary to maintain one identity across boundaries” (Wenger, 1998, p.158). Mihyeon’s presentation of socialized practice at the core of her community participation suggests that it has mitigated the “work of reconciliation” necessary to move further along her inbound trajectory.

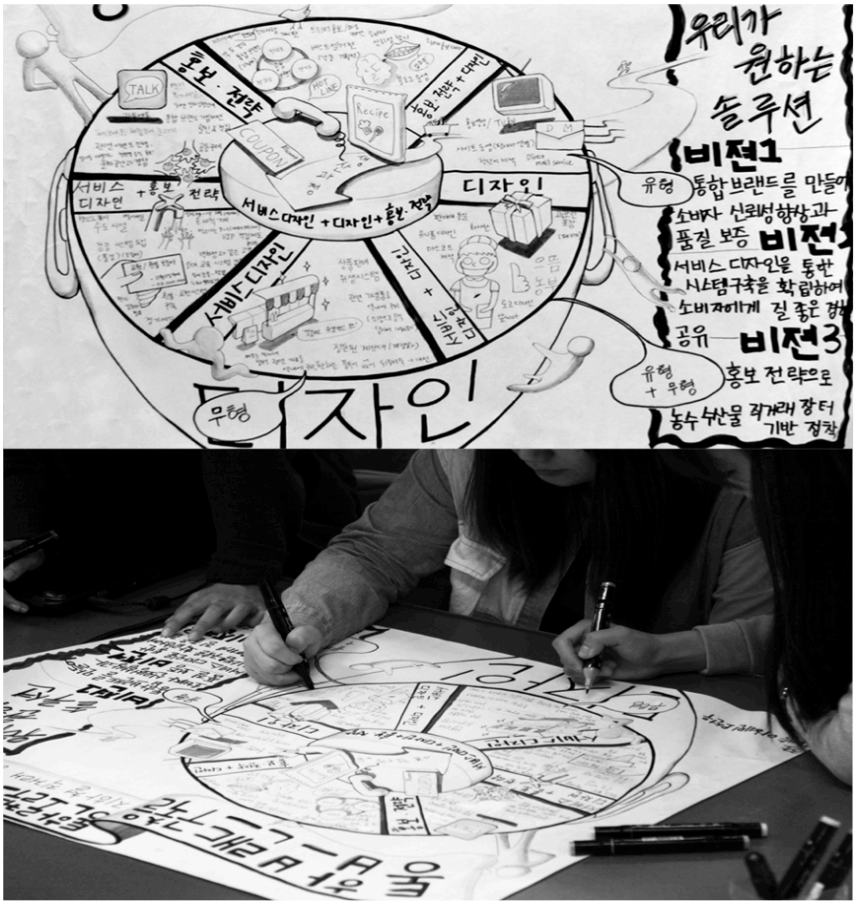


Figure 20: Mihyeon’s socialized practice evidenced through non-digital technologies

Also notable is the apparent lack of mobile technology in this presentation. Mihyeon suggested earlier the role of mobile technology as a supplementary tool (“using it to expand smaller images”). In the audio data, there is the audible use of computers to type information. In this image, the role of mobile technology is

limited to the site of production and audiencing (Rose, 2012); Mihyeon is using it to document a socialized practice from two perspectives. First, there is the bird's eye view from above the finished work; below that there is the process of composing that work itself (Figure 20). Mobile technology is used to document an existing socialized practice, harkening to Yoon's (2003) notion of technology in the Korean context being used to "retraditionalize", rather than disrupt or augment, existing communicative practices.

Figure 21: Mihyeon's practice of fieldwork in her informal spaces

Figures 21, another composite image, present Mihyeon's individualized practices (Park, 2011) in approaching her movement through Seoul on her commute. She

presents a scene in the subway station where an impromptu market has been set up to serve commuters. Mihyeon foregrounds the customer, the shopworkers, and the background throng of people in succession. The secondary image presents the foods being sold at this particular market. While seemingly unremarkable in terms of content, these two images (along with several more that Mihyeon contributed documenting her commute, the only data presenting evidence of Mihyeon's practices outside her disciplinary participation) harken to the fieldwork practices emphasized earlier in this vignette. Mihyeon is methodically documenting her everyday world, not explicitly adhering to everyday practices (Lankshear & Knobel, 2011) as one might assume, but as modeled through her disciplinary practice of fieldwork. She took the time to stop, frame these photographs, capture the text from signs, document the spaces and artifacts of her commute. It is evident throughout her mobile artifact data.

Individualized practices found in Mihyeon's photography parallel Jisoo's media practice of photography to make the foreign aspects of her campus familiar, as well as Misun's emphasis on her commute and the motion involved as expressive content (Taylor, 1957). Mihyeon composed all her visual data in black and white, adding a particular starkness to the expressive content already present in the composition. There is no array of colors in Mihyeon's presentation, only a stark clarity on materials and their assembly. Whether or not this was intentional is unclear, but Mihyeon expanded a bit on the role of the commute in the reflective prompts administered after an initial review of the data. Mihyeon emphasized the disciplinary practice of research and data collection. She further alluded to the growing importance of media in her learning practices without drawing specific attention to the use of black and white:

> "I try to use **my commuting hours** and **my free time** to look up things and gather data/materials. I use the subway every day, and on the subway **I research references** that can help my project. I find myself using **more media over text**."

Mihyeon's media evidences the intersection of these practices: disciplinary or formal, individualized, and socialized practices; through this media, there is the general coherence of an inbound trajectory, one in where Mihyeon draws on shared practices across her social topology and infuses her evidence with the expressive content of her commute. Mihyeon, in summation, presents a coherent inbound trajectory towards the disciplinary community, one that is heavily influenced, or aligned, with socialized activity and aspects of individualized practice.

7.2.6: Vignette #6: Jinsoo

Data	**Evidence**	**Coherence**
Interview	Narrative presented in the interview moves slightly between formal and individualized practice, with socialized practice backgrounded as necessity. Jinsoo repeatedly draws reference to responsibility, requirements, and so forth consistent with disciplinary participation, yet presents little to suggest an affinity.	Narrative diachronicity is present with the chronological narrative, suggesting a coherence in the interview data. Jinsoo presents evidence to suggest a general adherence to disciplinary practice with few competing adherences.
Image	9 images depicting an array of disciplinary practice but with a preponderance towards the formal	Images foreground site of audiencing and image itself as Jinsoo's view appears most

	and individualized. Little socialized interaction found in the visual data.	readily of a computer or mobile screen. Highly individualized presentation with little data to suggest socialized practice.
Video	No video was submitted	While the lack of a video submission is suggestive, it is not included the overall discussion of coherence.
Audio	One audio recording (3 minutes 1 seconds) of Jinsoo presenting to team of non-Korean students about particular Korean vocabulary words.	Jinsoo stresses the perfunctory of this exchange through repeated mentions of hurrying suggesting contrapuntal nature of this presentation with the overall narrative of individualized participation.
Reflective Prompts	Six reflective prompts detailing Jinsoo's preferences for paper and pen as opposed to mobile technology in terms of formal disciplinary practice, as well as a repeated adherence to disciplinary practice.	The data reaffirmed themes emerging from the interview and mobile artifacts, particularly in regards to individualized and socialized practice as a conduit to formal disciplinary participation
Overall	Jinsoo presents a coherent and completely unfettered narrative free from any apparent boundary trajectory. While some data presented contrapuntal evidence, the larger	Jinsoo presents an inbound trajectory towards the disciplinary community without any mitigating influences on his activity, no boundary trajectory

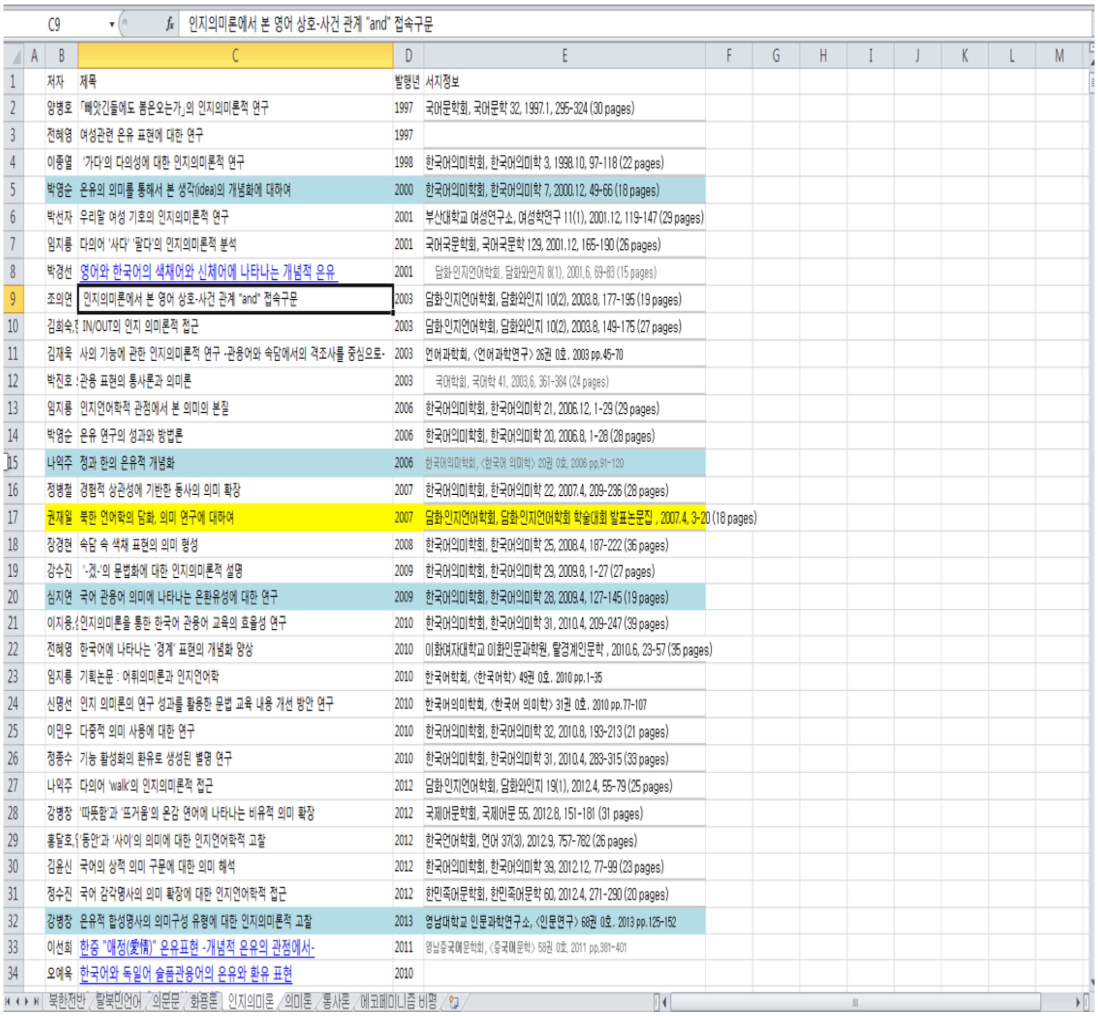
	dataset suggested an unequivocal narrative of disciplinary adherence.	of any sort towards a secondary professional community.

Table 19: Jinsoo's Summary Table

The final vignette narrates Jinsoo, a second year graduate student majoring in literature and linguistics at a private university in Seoul. Jinsoo does not rely on any sophisticated use of mobile technology to enact this inbound trajectory, nor does he rely on mobile media or media practices to structure that trajectory. While he engages many of the environments commonly used by the other graduate students (KakaoTalk, for instance), he uses mobile technology strictly for socialized and individualized activity related to formal learning. Examples of this activity include sending reminders to teammates to complete the readings, or to review spreadsheets and materials on his own. Jinsoo, uniquely among the vignettes presented in this chapter and rare among the participants overall, presents an inbound trajectory in which mobile technology does not significantly contribute to or facilitate a structure of interaction. Jinsoo studies, communicates, and learns with practices seemingly borrowed from non-digital environments. This does not render in the data as subversion as such, but rather indifference.

Evidence of this inbound trajectory in which mobile technology did not reveal the arc of the trajectory, but rather merely contributed to it were found throughout Jinsoo's data. To begin, Jinsoo contributed media that spoke to his engagement with his discipline, media that did not originate in mobile technology. Mobile technology in this instance served strictly as a secondary device in a larger network of activity, one presumably centered on desktop or laptop-based, individualized study as suggested in Figure 22. In this screenshot from a computer, there is a spreadsheet used for research on cognitive semantics and linguistics.

Jinsoo is researching colloquial language related to women, as well as other Korean phrases, across a corpus.



C9 인지의미론에서 본 영어 상호-사건 관계 "and" 접속구문

	저자	제목	발행년	서지정보
2	양병호	「베잇긴들에도 봄은오는가」의 인지의미론적 연구	1997	국어문학회, 국어문학 32, 1997.1, 295-324 (30 pages)
3	전혜영	여성관련 은유 표현에 대한 연구	1997	
4	이종열	'가다'의 다의성에 대한 인지의미론적 연구	1998	한국어의미학회, 한국어의미학 3, 1998.10, 97-118 (22 pages)
5	박영순	은유의 의미를 통해서 본 생각(idea)의 개념화에 대하여	2000	한국어의미학회, 한국어의미학 7, 2000.12, 49-66 (18 pages)
6	박선자	우리말 여성 기호의 인지의미론적 연구	2001	부산대학교 여성연구소, 여성학연구 11(1), 2001.12, 119-147 (29 pages)
7	임지룡	다의어 '사다' '팔다'의 인지의미론적 분석	2001	국어국문학회, 국어국문학 129, 2001.12, 165-190 (26 pages)
8	박경선	영어와 한국어의 색채어와 신체어에 나타나는 개념적 은유	2001	담화·인지언어학회, 담화와인지 8(1), 2001.6, 69-83 (15 pages)
9	조의연	인지의미론에서 본 영어 상호-사건 관계 "and" 접속구문	2003	담화·인지언어학회, 담화와인지 10(2), 2003.8, 177-195 (19 pages)
10	김희숙,ㅎ	IN/OUT의 인지 의미론적 접근	2003	담화·인지언어학회, 담화와인지 10(2), 2003.8, 149-175 (27 pages)
11	김재욱	사의 기능에 관한 인지의미론적 연구 -관용어와 속담에서의 격조사를 중심으로-	2003	언어과학회, 〈언어과학연구〉 26권 0호. 2003 pp.45-70
12	박진호	:관용 표현의 통사론과 의미론	2003	국어학회, 국어학 41, 2003.6, 361-384 (24 pages)
13	임지룡	인지언어학적 관점에서 본 의미의 본질	2006	한국어의미학회, 한국어의미학 21, 2006.12, 1-29 (29 pages)
14	박영순	은유 연구의 성과와 방법론	2006	한국어의미학회, 한국어의미학 20, 2006.8, 1-28 (28 pages)
15	나익주	정과 한의 은유적 개념화	2006	한국어의미학회, 〈한국어 의미학〉 20권 0호. 2006 pp.91-120
16	정병철	경험적 상관성에 기반한 동사의 의미 확장	2007	한국어의미학회, 한국어의미학 22, 2007.4, 209-236 (28 pages)
17	권재일	북한 언어학의 담화, 의미 연구에 대하여	2007	담화·인지언어학회, 담화·인지언어학회 학술대회 발표논문집 , 2007.4, 3-20 (18 pages)
18	장경현	속담 속 색채 표현의 의미 형성	2008	한국어의미학회, 한국어의미학 25, 2008.4, 187-222 (36 pages)
19	강수진	'-겠-'의 문법화에 대한 인지의미론적 설명	2009	한국어의미학회, 한국어의미학 29, 2009.8, 1-27 (27 pages)
20	심지연	국어 관용어 의미에 나타나는 은환유성에 대한 연구	2009	한국어의미학회, 한국어의미학 28, 2009.4, 127-145 (19 pages)
21	이지용,(	인지의미론을 통한 한국어 관용어 교육의 효율성 연구	2010	한국어의미학회, 한국어의미학 31, 2010.4, 209-247 (39 pages)
22	전혜영	한국어에 나타나는 '경계' 표현의 개념화 양상	2010	이화여자대학교 이화인문과학원, 탈경계인문학 , 2010.6, 23-57 (35 pages)
23	임지룡	기획논문 : 어휘의미론과 인지언어학	2010	한국어학회, 〈한국어학〉 49권 0호. 2010 pp.1-35
24	신명선	인지 의미론의 연구 성과를 활용한 문법 교육 내용 개선 방안 연구	2010	한국어의미학회, 〈한국어 의미학〉 31권 0호. 2010 pp.77-107
25	이민우	다중적 의미 사용에 대한 연구	2010	한국어의미학회, 한국어의미학 32, 2010.8, 193-213 (21 pages)
26	정종수	기능 활성화의 환유로 생성된 별명 연구	2010	한국어의미학회, 한국어의미학 31, 2010.4, 283-315 (33 pages)
27	나익주	다의어 'walk'의 인지의미론적 접근	2012	담화·인지언어학회, 담화와인지 19(1), 2012.4, 55-79 (25 pages)
28	강병창	'따뜻함'과 '뜨거움'의 온감 연어에 나타나는 비유적 의미 확장	2012	국제어문학회, 국제어문 55, 2012.8, 151-181 (31 pages)
29	홍달호,(	'동안'과 '사이'의 의미에 대한 인지언어학적 고찰	2012	한국언어학회, 언어 37(3), 2012.9, 757-782 (26 pages)
30	김윤신	국어의 상적 의미 구문에 대한 의미 해석	2012	한국어의미학회, 한국어의미학 39, 2012.12, 77-99 (23 pages)
31	정수진	국어 감각명사의 의미 확장에 대한 인지언어학적 접근	2012	한민족어문학회, 한민족어문학 60, 2012.4, 271-290 (20 pages)
32	강병창	은유적 합성명사의 의미구성 유형에 대한 인지의미론적 고찰	2013	영남대학교 인문과학연구소, 〈인문연구〉 68권 0호. 2013 pp.125-152
33	이선희	한중 "애정(愛情)" 은유표현 -개념적 은유의 관점에서-	2011	영남중국어문학회, 〈중국어문학〉 58권 0호. 2011 pp.381-401
34	오예옥	한국어와 독일어 슬픔관용어의 은유와 환유 표현	2010	

Figure 22: Jinsoo's individualized practice; a non-mobile technology mediation

Jinsoo reinforces this focus further in subsequent data that spoke to his socialized interaction with other group members. Jinsoo's tone throughout these passages is an earnestness born of task-based activity. While some allusions are made to more socialized forms of etiquette, most of the socialized interaction is stripped of language that would suggest an affective or affinity-based core. Jinsoo is almost uniquely among the participants singularly focused on the task at hand, seemingly unaffected by socialized or informal motivations. For Jinsoo, the community is

strictly a utilitarian enterprise in which to complete the disciplinary tasks rather than a community that must be socially engaged in order to generate the resiliency necessary to complete the tasks, subverting or subordinating many of the South Korean socialized practices discussed earlier in this thesis.

This type of functional socialization is evident throughout Jinsoo's data. There is very little evidence of the types of socialized artifacts generated as a result of the confluence of mobile technology and South Korean sociocultural contextualization. There are no abbreviations or condensations of phrases or words as a result of texting, little use of emoticons, and very little evidence of general socialized perfunctoriness. There is a minimum level of reciprocity demanded of South Korean socialized practice and little to no insertion of *jeong,* or a particular emotional management of multimemberships.

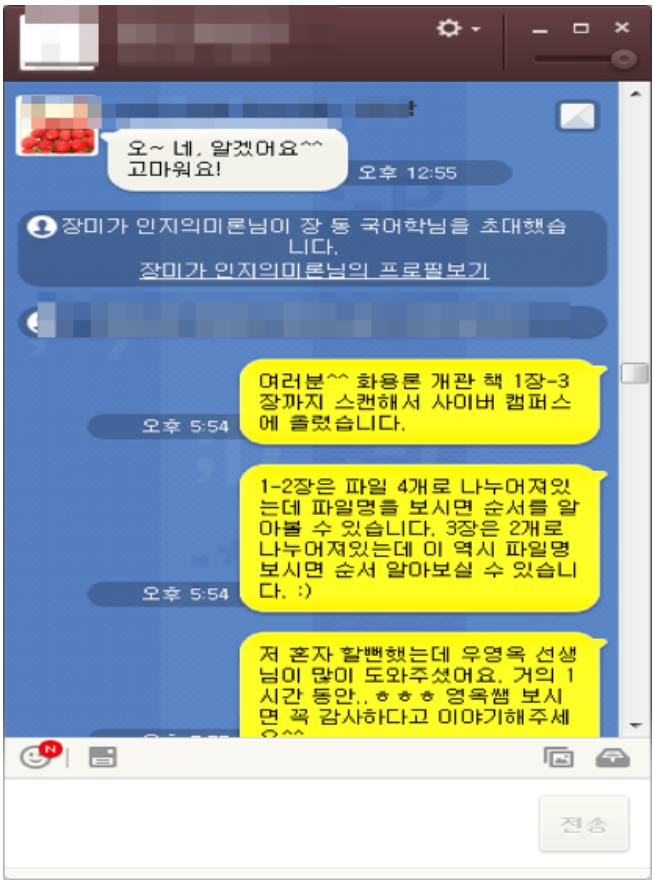


Figure 23: Jinsoo's socialized practice

Jinsoo presents an inbound trajectory that is governed not by socialized interaction as a means of greater community participation, but rather one that positions socialized interaction as a byproduct of disciplinary norms in terms of learning practices. Jinsoo is presented with the requirements for group projects necessitating the need for socialized interaction and he adheres to these. Nowhere in the evidence does he present evidence of socialized engagement above and beyond that which is necessary to complete the formal learning task at hand.

Jinsoo's inbound trajectory, presented as perfunctory or strictly an expectation of disciplinary practice, is reinforced by his supporting mobile artifact data. Almost uniquely among the participants (n=25), there is little evidence in Jinsoo's data of any community members, peripheral participants, or socialized activity aside from

the messaging application screenshots he provides. He suggests many of the same individualized practices of Jisoo, or at least a predilection towards the individualized, without noting any preference for individualized or socialized practice.

The only evidence of socialized interaction presented are the screenshots (three total) of group chats on KakaoTalk. In all the remaining data (interview, mobile artifact, and reflective prompt data), Jinsoo presents a world of individualized interaction, one with a pronounced introspective gaze. We, as the audience, are invited to share this gaze in the site of audiencing (Rose, 2012), to note the inward focus. All the images presented by Jinsoo were inward facing: a computer screen, a study area, a screenshot of a mobile application. Figure 24 is representative of the data overall in its depiction of a study space with a computer screen. The composition suggests a stoicism, or a heightened utilitarianism in Jinsoo's approach which is reinforced by the textual and mobile artifact data: no ornamentation, little to no emotional content in the socialized exchanges, a task-orientation without overt subversion.

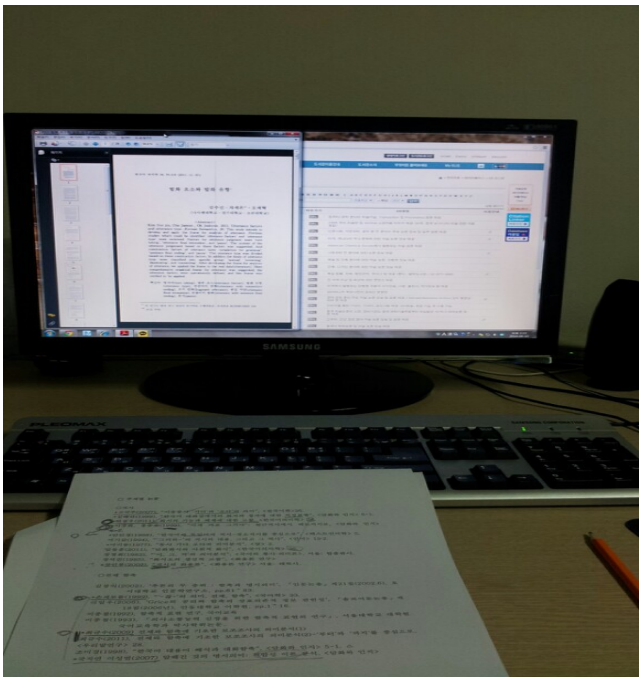


Figure 24: Jinsoo's inward, individualized gaze

No data suggested an interactive, collaborative, and generally outward gaze as was presented with Jisun or Mia in their practices of media design and presentation; yet, none of the data suggested an introspective gaze of the like presented with Jisoo (and her use of mobile technology to orient herself to unfamiliar surroundings). With Jinsoo, we are looking in as he is looking in, but are left no wiser for the experience as to how he is orienting himself in relation to his disciplinary community. Further, throughout Jinsoo's data there is a noticeable lack of emphasis on mobile technology as a means of enacting, or making visible, the inbound trajectory. Jinsoo uses mobile technology and that is made evident through the KakaoTalk exchanges with his group members, but there is little evidence to suggest that it is central to his disciplinary or learning practices. There is little evidence to suggest that he has favored any technology over another in his learning activity. A task orientation appears to dominate his learning practices.

Further, Jinsoo presents no mitigating influences on his activity, no boundary trajectory of any sort towards a secondary professional community. There are no indications of secondary allegiances or influences, no informal communities of friends governing his behavior. What is presented is a clear, explicit, and pragmatic orientation towards a community of practice. This problematizes to some degree the approach taken in this research which emphasizes the centrality of the mobile technology and the media practices generated there as a means of evidencing the learning trajectory. This is discussed in greater detail further in this thesis.

7.3: Existing and Emerging Themes

The vignettes presented in this chapter presented evidence of inbound, outbound, and boundary trajectories and the various cultural, disciplinary, and technological factors mitigating the clarity of their presentation. There is evidence of how mobile technology can be used as a means of evidencing learning activity and how the learning practices emerging from that mobile technology use inform the participation in often overlapping communities of practice. There is evidence of how informal practices inform formal practices (primarily how KakaoTalk structures the socialized interaction), and how individualized practice can suggest introspection (Jisoo), a stoic task-based orientation (Jinsoo), and subversion (Jisoo).

For many of the participants, non-exclusivity emerges as a governing characteristic. Most of the vignettes (aside from Jinsoo and Jisoo to a lesser degree) and most of the participant data overall suggest a series of movements through overlapping communities. From informal to formal, from disciplinary to professional, and back again. This problematizes the boundary trajectory as

defined by Wenger (1998), which is discussed in greater detail further in subsequent chapters.

Chapter 8: Emerging Themes

This chapter begins with a discussion on how the themes were drawn out of the data and what themes emerged from the data but aren't included in this discussion in lieu of their relevance to the research questions being asked. It then transitions into a discussion on the themes of relevance to this research study and how they apply to the data. These themes are drawn primarily from the vignettes presented in the last chapter, as well as from the larger dataset, and less from the data emerging from the pilot study.

8.1: Parallel and Backgrounded Themes Emerging from the Data

It is significant to note that several emergent themes were backgrounded in this stage of analysis due to scope limitations, falling as they did outside the scope of the research questions being asked. However, as potentially rich strands of research they are briefly described here before the larger discussion on the relevant themes applicable to this research. Please note that many of these backgrounded themes inform responses to the research questions, but do not directly answer them; they emerged as patterns in the data from which further research might be able to extract significance.

8.1.1: Physical Space

As with the pilot study, the repeated reference to physical spatial considerations across the different modes of data suggested that space and place are important distinctions in graduate student participation with or without mobile technology. There was reference in the data to the intimacy or lack thereof of coffee shops, study spaces, bedrooms and the technology used to manipulate those spaces: alarm clocks, mobile phones, and headphones, suggesting the importance of aural technology in the management of public space for learning (Fluegge, 2011).

Throughout the data there were themes related to the non-digital artifacts of community practice: pens, papers, notebooks, and all the physical spaces that these were engaged in.

However rich thematically, these space and place considerations in their physical form fall outside the scope of the research questions being asked in this study; they have been backgrounded for the main study while the cognitive spaces and places, the transformation of habitus of Kress & Pachler (2007), and the social topologies of Bayne et al. (2014) have been foregrounded. This is not to negate the symbiosis that exists between the physical and the cognitive spaces evidenced in the data; they are assumed to be working in tandem to structure both the social topology and the nexus of multimemberships that these graduate students inhabit. Yet, this thesis is tasked with charting mobile technology use and learning trajectories, data points that are informed by but determined by strict accounts of physical activity. As such, these physical spatial dimensions of the research have been backgrounded.

8.1.2: Projected Intimacy

A theme that emerged from the data was the perceived importance of intimacy, privacy, and identity development and the role of mobile media in establishing this. This analysis concludes that some of these fall under the umbrella of "personal media" (Lüders, 2008) and, if this were to be pursued analytically, it would be important to consider whether these patterns of intimacy and privacy adhere to or disengage from traditional notions of new media and their use in the humanities in South Korean higher education.

Several students presented their personal space as the subject of their composition, creating images, video, and audio highlighting the places in which

they study and learn. Many of these locations were in the home, in secluded private spaces, and decidedly *sedentary* (insofar as that is possible). This data is highly personal, informal, and individualized for the most part. However, this represents a form of identity creation and authorship. This intimacy also reinforces many of the findings of Hjorth in her work on the mobile practices of segments of the Korean population in informal settings. This intimacy and social interaction signals identity creation in relation to the community of practice that these students are involved in, a point in keeping Lave & Wenger's legitimate peripheral participation. Legitimate peripheral participation places the focus of learning not on the 'cognitive processes and conceptual structures involved" but rather on the 'social engagements' that provide the 'proper context for learning to take place' (Hanks in Lave & Wenger, 1991, p.14). These 'social engagements' are not limited to localized instances of apprentice/mentor interaction, but rather encompass the process of being or becoming participants "in the practices of social communities and constructing identities in relation to these communities' (Wenger, 1998: p. 4). This was most apparent in the mobile artifacts where many participants carefully orchestrated a projection of the "studious" or "academic" self, complete with bookshelves, desks, and mixtures of analog and digital practices. This was not uniform across the data, but remains an emergent theme that suggest further research.

While all of these themes in some way relate to the overall focus of this thesis as made explicit in the research questions, they are not treated as direct lines of analysis. They inform, but do not supplant the themes as discussed in the following section. Yet, they remain viable and potentially rich strands of inquiry for further research.

8.2: Foregrounded Themes Emerging from the Data

The themes foregrounded for this thesis are those specifically related to the research questions being asked: about mobile technology use, mobile artifacts and learning practices, and their attendant learning trajectories. It was hoped that these learning trajectories would be revealed through following the graduate student through their mobile technology use and the practices that governed that use towards both disciplinary participation and across the nexus of multimembership. Most importantly for this thesis is how an individual graduate student might be engaged in several distinct, yet overlapping, trajectories simultaneously. There is significant evidence in the data to support simultaneous inbound and boundary trajectories, as well as boundary and outbound trajectories. This suggests the importance of multimemberships (Wenger, 1998) for these graduate students as they hedge the demands of one community with another.

There is significant evidence to support the secondary theme of subversion as a means of identifying an outbound trajectory; yet, it is important to note that subversion did not automatically entail an outbound trajectory. Several participants appeared to subvert *individual* disciplinary practices, while maintaining an *overall* allegiance to a disciplinary community. Several subverted socialized practices, yet maintained an individualized identity towards a community suggesting tension within specific South Korean socialized practices (problematizing aspects of Yoon's retraditionalization). Yet, despite these instances of subversive practice, none of the graduate students participating in this research presented evidence of subversion in the total, or a complete repudiation of community practice, suggesting that learning trajectories are nuanced aggregations of secondary themes. Only in their aggregated state are we presented with the trajectory itself.

There are several secondary themes that emerged from the data that proved more prominent than others. To begin, it proved critical to position mobile technology as a tool for allowing activity to bind or structure a learning context. Overall, these students used mobile technology to create an environment in which disciplinary participation *might* take place. Whether or not they chose to enact disciplinary participation through mobile technology depended on a host of factors (the confluence of time, inclination, impending deadline, greater disciplinary community engagement, etc.), but it is important to note that allowing for this *might* was an instance of organizational reflexivity. The mobile technology *allowed for* the possibility of disciplinary participation at any one point, an allowance that the graduate students were still required to operationalize through their learning orientation and learning activity. This reflexivity, or meta-awareness of the affordance of learning in context, is returned to again in this thesis.

What the data suggested is that this disciplinary participation and mobile technology use is influenced by, or takes place across, informal, formal, socialized, and individualized field of activity. Informal activity and informal communities of friends or classmates overlap with formal, disciplinary discussions or learning. South Korean culture itself acts a contextualizing agent within this mobile technology context. Senior and other age or social hierarchies, as well as the maturity of the Korean mobile environment, influence activity. Activity is structured around the both the technology and the culture from which the technology emerged and in which the technology is being used. The artifacts of this mediated activity include the mobile media and the media practices used to generate that media, as well as the disciplinary practices of data collection, fieldwork, and discussion. The themes suggest that this activity is not so easily reduced, or disentangled, and is best seen in the aggregate, which in this research is the trajectory itself.

What follows is a thematic table outlining the themes found and the secondary themes that were aggregated to form these larger themes, which is followed by a discussion of the secondary themes found in each.

Theme	**Secondary themes**
Disciplinary Trajectories as Overlapping Non-exclusive Movements of Identification and Membership	Inbound Trajectory as Disciplinary Adherence, Outbound Trajectory as Subversion, Boundary Trajectories as Managing Multimemberships
Mobile Technology use enables graduate student participation	Categorizations of Mobile Use, Context Generation, Korean culture as a contextualizing agent
Learning and Media Practices and Mobile Media as Methods for Learning and Disciplinary Engagement	Orientation, Socialization and Communication; Multimodal Composition and Design, Significance for Participation in the Discipline

Table 20: Thematic Table with Secondary Themes

8.3: Main Theme: Disciplinary Trajectories as Overlapping Non-exclusive Movements of Identification and Membership

This theme emerged from the data as a direct answering of both these research questions: *Does this combination of mobile technology use and media practice suggest a learner trajectory in respect to the disciplinary community? If so, is this trajectory inbound, outbound, or boundary?*

The data presented considerable evidence across a range of modes and across a range of practices and artifacts, which were thematically categorized as trajectories. These trajectories were determined according to the mobile technology use, the media and learning practices, and the mobile artifacts being produced by these graduate students in the course of their learning. These trajectories include inbound trajectory (suggesting a strong community identification with or alignment with disciplinary practice), outbound trajectory (suggesting an overall subversion of disciplinary practice, or a lack of identification with the disciplinary community) and boundary trajectory (which presented evidence of the graduate student establishing, maintaining, or attempting to maintain multimemberships across several communities). These themes were strongly correlated based on the data across themes based on the consistent application of analysis.

Each of the graduate students represented in the six vignettes demonstrated evidence to suggest that they were engaged in a learning trajectory (Wenger, 1998), either a boundary trajectory, an inbound trajectory, an outbound trajectory, or a combination thereof. These six vignettes were selected from the entire participant dataset as they evidenced at least one trajectory. This does not suggest that the remaining 19 participant datasets didn't produce a trajectory of any sort; rather, these six were selected as they were representative of the trajectories being evidenced or suggested in the remaining data. Some were chosen as they approximated an exclusive trajectory, yet these were quite rare in the larger dataset.

Most of the participants exhibited a set of multimemberships (Wenger, 1998) and learning practices to suggest overlapping trajectories, hence the non-exclusivity of the theme's title. This was most commonly exhibited by those graduate students

who presented both boundary and inbound trajectories, which generated a rich space for analysis on the inherent liminality of the nexus of multimembership. These students exhibited affinities for particular communities, without negating a trajectory towards or in parallel to another. The vignettes present several manifestations of this: Jisun and Mia's vignettes suggests an affinity for their professional community, while maintaining an adherence to the disciplinary community. Kyungsook presented much the same, but with a projected affinity for her informal socialized community. Jinsoo and Jisoo's trajectories were more singularly presented. There was evidence of students in the larger dataset presenting boundary and outbound trajectories simultaneously.

8.3.1: Inbound Trajectory as Disciplinary Adherence

Of those participants who suggested an overt inbound trajectory, most readily presented by Mihyeon in the vignettes and others in the larger dataset, there were repeated presentations of adhering to disciplinary community practice as the graduate student, in their peripherality, *perceived* it to be.

As the representation of inbound trajectory in the vignettes, In Mihyeon's case this involved not only the adherence to socialized community practice, but to field work itself. Much of her overall narrative depended on the importance of field work, how this was critical to participation in this community, and her off comment regarding her lack of say in how these field site locations were chosen. The field activities become the conduit through which socialized practice is presented ("since we go on field trips together, my colleagues and I are really close") both in terms of focused explorations around a particular aspect of the community's domain ("When we go on field trips together, it is more fun and educational because we have discussions about the pieces, exchanging each other's opinion") and in terms of the overall understanding that these field

activities and subsequent discussions impact her understanding of the content ("those discussions really help my study because I get to learn about facts and opinions I have never thought of before"). As Mihyeon presents her inbound trajectory through community and socialized practice, there is evidence of her navigating the tacitness of peripheral participation; community practice is being modeled and reinforced for her *in situ,* both in the field and in the throngs of community socialization.

Further to this are the language choices used; Mihyeon refers to her fellow graduate students and supervising faculty as colleagues instead of classmates, a language selection of particular relevance to the Korean context with colleague implying much greater levels of professionalism than classmate. Mihyeon is suggesting an evolving identity as well in keeping with her community of practice as practitioner (colleague) rather than peripheral participant (classmate).

Technology use suggests an inbound trajectory for Mihyeon as well in her perception of what is consistent with appropriate community practice. Her foregrounding of the supplementary role of mobile technology as a means of supporting community practice, rather than directly shaping it, is evident in her depiction of using mobile technology to further investigate paintings and to supplement fieldwork. She emphasizes the secondary and supplementary role of mobile technology throughout the narrative as a means of supporting "real" community practice ("Looking at pictures is important too but we also have to see the real thing"). Rarely did the evidence suggest such a singular trajectory, however; more often, even dominant trajectories were laced with elements of a counter-narrative of subversion.

8.3.2: Outbound trajectories as subversion

Subversion as presented here is meant to present patterns that emerged consistently throughout the data of contestation, or when these graduate students resisted, defied, subverted, or simply ignored existing community practice. This does not appear due to any sort of ambiguity emerging from the tacitness of community practice, but rather for how it countered their own idiosyncratic practices emerging from their own nexus of multimembership. Further, it was presented in the data as a deliberate subversion, rather than accidental or a misaligned instance of practice sharing with the disciplinary or professional community.

Subversion as a theme further adds a level of complexity to learning trajectories, and countenances much of the criticism directed at community of practice theory overall (tacit, contested, plural practices, etc.). Yet subversion is not inherently positioned as a negative in this thesis, as an unwanted byproduct of conflicting community participation or misalignment; it merely reveals the complex contours of peripherality and the nexus of multimembership. Subversion can be a repudiation of existing community practice suggesting an outbound trajectory, a totalizing subversion. Or, more readily in the data, it can be indicative of a partial repudiation of community practice in respect to the reconciliation of the multiple identities across multimemberships. These graduate students rarely accept the community of practice in the total, but rather select which practices to employ.

Many of the narratives contained evidence of this subversion: uninstalling a particular application on which group members relied, avoiding or disengaging from the more socialized aspects of both South Korean sociocultural practice and disciplinary community participation, ignoring particular hierarchical roles (senior-junior, faculty-student, and so forth), and even eschewing mobile technology

altogether. Jisoo repeatedly pointed to instances where the lack of digital technology was preferable, suggesting this was more than a temporary misgiving, or general predilection. All are suggestive of an overall trajectory that is contested in itself.

8.3.3: Boundary Trajectories as Managing Multimemberships

The boundary trajectories presented in the vignettes and in the overall dataset were thematically suggestive, and were most readily evidenced by those exhibiting boundary trajectories between the academic and professional communities, most notably Jisun, Mia, and Kyungsook. They presented evidence that suggested a particular affinity for one community, while maintaining adherence to the community practices of another. As such, the evidence from their vignettes lay claim to a wide range of practices: mobile design, blocking, mobile technology use, presentation, dissemination, critical review, faculty-student interaction, and so forth.

What is most revealing about this theme is the variation in which it was projected in the narratives being presented: as an almost seamless, confident interaction between both worlds with very little overt reconciliation (Jisun); as an environment of creativity, resilience, and criticism (Mia); or as a socialized environment where informal socialized practice makes the management of multimemberships palatable (Kyungsook). So the management of these multimemberships becomes a highly idiosyncratic construction suggesting a larger trajectory.

8.4: Secondary Theme #1: Mobile technology use enables graduate student participation

These six vignettes were further chosen as they represented a range of mobile technology. As such, all the graduate students highlighted in these vignettes presented some evidence of mobile technology use that moved between informal, formal, socialized, and individualized activity. Certain graduate students were not selected for these vignettes precisely because they didn't present a range of mobile technology use in which to evidence the main theme (Disciplinary Trajectories as Overlapping Non-exclusive Movements of Identification and Membership) and the secondary theme (Learning and Media Practices and Mobile Media as Methods for Learning and Disciplinary Engagement). This theme served to provide a foundation, or field, of activity, in which to observe the other themes present.

Some presented mobile technology in the foreground: for Jisun, mobile technology becomes the object and subject of her community participation. Some presented mobile technology in support: Mihyeon use of mobile technology to expand on paintings or document field work never detracts for her adherence to "real" community practice. Some even presented mobile technology use in subversion: Jisoo's position of mobile technology being a novelty ("a one-off thing to me") is countered with her use of mobile technology in other instances.

Most of the graduate students here presented evidence of mobile technology use that allowed them to manage multiple community memberships, multiple modes of communication, and moves between informal, formal, socialized and individualized uses. There is evidence to suggest that mobile technology provides capacity for generating interactional context in which to manage multimemberships. Jisun's mobile design is predicated in part on her capacity for

interacting with her group members; Mia's interaction, script review, and ongoing critiques with her fellow classmates and faculty are facilitated through her use of mobile technology; and Kyungsook's use of mobile technology, while supplementary, is still a means for her engagement with her communities. Methodologically, most of this was evidenced within the chronological aspects of the narrative and the role of mobile technology therein. In these narratives and in their evidence of mobile technology use for informal, formal, socialized and individualized practice, there are multiple community memberships being maintained and engaged. As such, there is the role of mobile technology throughout the data on context generation.

Much of this context generation was structured to some degree, by the contextualizing agent of South Korean sociocultural practice itself. There is evidence of Yoon's retraditionalized practices in the mobile environment, particularly in reciprocity and hyper-connectiveness, which were instructive even in the breach. The uninstalling or blocking of a particular mobile application used to manage group communication is a breach of the hyper-connectiveness suggested by South Korean sociocultural practice. Thematically, this sociocultural contextualization is an element in the larger learning trajectory.

This overall theme emerged from the data as both a direct answering of the research question: How do graduate students in higher education in the humanities in South Korea use mobile technology to support their learning practices? Overall, many of the participants demonstrated considerable activity across these categorizations, suggesting the centrality, or general importance, of mobile technology in their overall learning practices. These themes were strongly correlated based on the data based on the consistent application of the analysis.

8.5: Secondary Theme #2: Learning, Media Practices, and Mobile Media as Methods for Community Engagement

Employing mobile technology use as a focus point of this research provided a structure from which this secondary theme emerged: learning, media practices, and mobile media as methods for community engagement. The vignettes were chosen for their ability to present the diversity and relative sophistication of these learning and media practices and their use of mobile media. They suggest a relationship between the learning trajectory or trajectories that the graduate student presented in their data and the practices used to both enact and represent that learning trajectory. Some of these practices are directly correlated to formal community practices: Jisun's mobile design practices are practices consistent with the professional community towards which she demonstrates an affinity, Mihyeon's use of media to support community practice (field work), Mia's presentation of 'blocking' in video form, and so on. Some are idiosyncratic to the individual or emerge from more informal environments: Jisoo's use of mobile photography to orient herself to "inhuman" environments, the use of emoticons throughout the messaging screenshots in many of the vignettes, and so forth.

Secondary themes were identified in the data, which include orientation & navigation, socialization & communication, composition, dissemination, and field practice. Many of these secondary categories aggregated a broad range of practices, but they all involve the use of mobile technology for either direct or indirect disciplinary participation. They were categorized in an attempt to cohere them thematically with themes emerging from the narratives. There were instances of the use of mobile media for orientation (Jisoo), socialization and communication (almost all the participants presented evidence of this), multimodal composition and design (Jisun, Mia, and Kyungsook), and significance of this mobile media for participation in the discipline (again, evidenced by the

media studies participants as well as Mihyeon's documentation of field work). Overall, many of the participants demonstrated considerable activity across several of these secondary themes, suggesting the diversity of practices emerging from, or influenced by, the use of mobile technology in their overall learning.

8.6: Themes and Aggregating into Trajectories

Without resorting to positivist reductions of the complexity of how these individual themes might aggregate into or inform the presentation of a larger trajectory, it is worth noting that the methodology presented earlier in this thesis evidenced this environment. The methodology provided the frame by which this activity is being observed, the data generated as a result of that observation, the transcription of that data into salient parts, and the analysis of that data that generated these vignettes and the themes being discussed in this chapter. Methods of selection were applied to each and every stage of this process, a naturally reductionist process. Seemingly irrelevant data was disregarded, secondary themes emerging from the research were backgrounded, and so forth. This is an inevitable result of the analytical and research process; complexity is reduced for clarity.

Yet the rigor of this analysis mitigates that reductionism. This research relies on several core functions of the data that speak to trajectory and does so with consistency. It relies on the coherence or incoherence supplied through narrative intentionality, learning practice, mobile technology use, and explicit corroboration in the form of reflective prompts. It emphasizes that much of this trajectory can be evidenced through mobile technology use and that much of it is structured through South Korean sociocultural practice. It emphasizes agency and narrative intentionality in balancing the positivist presentation of community influence common to much of the research. This is the means for evidencing trajectory as

presented in this thesis; while not formulaic, it is rigorous. It allows for a broad enough spectrum of activity to evidence the idiosyncratic and communal, proves broad enough to evidence the formal and the informal. It extrapolates its themes as a result of this.

As such, the themes presented in this chapter are a byproduct of this focus and are naturally selective. The trajectories that aggregate as a result are not monolithic, nor fixed courses towards fixed destinations. They suggest "a continuous motion – one that has a momentum of its own in addition to a field of influences" (Wenger, 1998, p. 154). These trajectories would presumably manifest differently with a different analytical lens: gender, racial, or class considerations; linguistic divides, and so forth. The themes presented here are a manifestation of the structure applied to this thesis.

8.7: Learning Trajectories: Expanding from Themes

It is important to briefly note how this emerging focus on trajectory is broadened by the themes emerging from this research, particularly in the kinds of trajectories being evidenced. Please note that this brief discussion extends, but doesn't supplant, the discussion on community of practice theory and learning trajectories from previous chapters.

Inbound trajectories, a process where "newcomers are joining the community with the prospect of becoming full participants in its practice" (Wenger, 2010), were evident in the data. However, it should be noted that this correlation was not as strong as initially assumed. There were several participants who had invested in this inbound trajectory in respect to their disciplinary community of practice, "even though their present participation may be peripheral" (2010, p.134). Outbound trajectories were used for those participants who exhibited practices or

articulated thoughts inconsistent, subversive of, or altogether dismissive of community practice. It should be noted that out of the total of 25 participants, only two expressed an overt and singular outbound trajectory. These two participants suggested a dissatisfaction or disillusionment with the disciplinary community of practice in their interviews as well as their mobile artifacts, yet presented no evidence to suggest an inbound trajectory towards another community.

More commonly, however, were presentations of limited outbound characteristics that didn't aggregate to an outbound trajectory. For example, an act of subversion towards a socialized academic practice constituted a rejection or undermining of an academic practice without a complete detachment from the overall academic community. This is referred to by the author as oscillation, or a secondary trajectory of discretionary practice, and is discussed later in this thesis. This adaptation of learning trajectories proved necessary and is positioned as an original contribution of this research.

Chapter 9: Discussion of Findings

This chapter builds upon several threads running throughout this thesis. It first and foremost builds on the theoretical foundation in exploring how mobile technology use, learning practices, and narratives inform a trajectory towards, away, or in parallel to a community (Wenger, 1998). This chapter builds on that theoretical foundation, the vignettes, and the themes emerging from those vignettes and relates those again to the research questions being asked for this thesis. As such, this chapter is divided thematically into findings emerging from this structure. These themes include discussions on learning trajectories, community of practice theory, the need for adaptations to these learning trajectories based on the evidence and analysis presented in this thesis, as well as the conceptual shifts that these adaptations mean for this research.

In the vignettes, there is evidence of inbound, outbound, and boundary trajectories, and permutations or combinations of these trajectories. There is evidence to suggest that these three trajectories don't fully encapsulate all the movements of graduate students in South Korean universities in terms of overt allegiances or affinities, or trajectories governed primarily by informal, socialized communities. What this data challenged was the notion that the author had at the beginning of this research: that the learning trajectory most evident in most, if not all, of these participants would have been a disciplinary one. This was assumed to be partly due to their position as graduate students, peripheral participants in a community of practice who had already signaled their intent to center into that community by choosing to enroll in a formal programme in the humanities. This research overall challenges that assumption. This chapter presents findings that suggest that learning trajectories are often simultaneous, occasionally contradictory, and an aggregation of many sub-trajectories (or movements within

trajectories). These will be discussed in detail further in this chapter, but it is important to note at the onset that based on the evidence and analysis presented in this thesis, Wenger's learning trajectories would benefit from further refinement.

This is followed by broader findings emerging from this research related to multimemberships, social topologies, and their relationship to mobile learning, which precedes a discussion on findings related to graduate student participation, and the contextualization effect of South Korean sociocultural practice itself. The chapter concludes with a discussion on how these research questions were answered.

9.1: Participation and Trajectories

The mobile technology use, the mobile artifacts, the learning practices used to produce them, as well as the myriad of other practices (formal, informal, socialized, individualized) that inform the activity of these graduate students, present a set of activities that may be used to suggest a trajectory in relation to a community. The evidence presented a selective adherence in the majority of the participants to the shared repertoire of practices at work in at least one community. Some adhered to the practices of the disciplinary community as modeled by seniors and faculty, some were selective in their practice adherence in disciplinary communities without fully committing to them, some adhered to practices consistent with communities outside the disciplinary. Most exhibited an adherence to a shared repertoire of practices across a set of communities, or the practice sharing consistent with their nexus of multimembership.

Many of these graduate students were in something approximating an inbound trajectory towards their disciplinary community. Some presented an inbound

trajectory towards a professional community and a boundary trajectory towards the disciplinary community. Some exhibited, through repeated mentions of subversive practice, an outbound trajectory, or an approximation of an outbound trajectory. What this research doesn't assume, however, is that these trajectories are inversely proportional; that is, a movement towards one community (inbound) does not imply an outbound trajectory towards another. A small number of participants seemed to exhibit inbound trajectories towards several communities simultaneously, professional, academic or otherwise.

Mobile technology use was one of the consistent, if not central, attributes of these trajectories, even in those that subverted or opposed its use. It was the environment where much of this activity took place and was evidenced; it is where boundaries between participation in a range of communities across the nexus of multimemberships were made most visible and most permeable. Mobile technology provides context for the graduate student that is often inseparable from the activity itself.

9.2: Learning Trajectories>Communities of Practice

The focus of this research overall is on the learning trajectories exhibited by these graduate students rather than on the membership in the actual communities' themselves. This is an important distinction: it is one of the implicit assumptions of this research that these graduate students would present little explicit evidence to suggest they were full members in any particular community of practice. It was hoped that the data would suggest a trajectory towards a particular community, rather than a fully fledged identity as community member, which due to the nature of graduate study and peripheral participation was deemed impossible. This is true insofar as it relates to the disciplinary and professional communities presented in the data; the socialized communities were different in that respect in

that full membership was assumed. The reflective prompts would serve to triangulate the coherence, or discord, drawn from the remaining data and position the graduate student in a particular trajectory.

For the most part this assumption proved tenable. Very few of the graduate students suggested any overt identity as a community member, but rather selectively adopted particular practices consistent with community participation. Few modeled their activity on faculty (Mihyeon's inbound trajectory was partly constituted by practices modeled by faculty), many modeled their behavior primarily from peers (Kyungsook's practices were drawn from her informal, social communities), and a few presented a variety of both informal and formal influences (Jisoo's orienting her formal study space through informal practices; Jisun drew influence from both professional and disciplinary communities). Aside from those that overtly presented an inbound trajectory, there is evidence of a selective boundary trajectory, one assembled through a mixture of individualized practices, socialized practices, and informal and formal practices; each trajectory rendered, regardless of a consistent orientation towards a particular community, uniquely.

Due to the impossibility of full community membership as a graduate student in either the professional or disciplinary communities and the uniqueness of the trajectories being presented, this research has an overt focus on learning trajectories rather than community of practice. The problematic aspects of community of practice theory (Gourlay, 2009 & Lea, 2005) as applied to these graduate students, namely the role of tacit practices, assessment in maintaining a permanent novice status, or the nature of subversion in undermining community practice, have been partially mitigated through a focus on trajectory rather than

community membership. With trajectory, full membership is not the focus of analysis, but rather the directional correlation to the community.

Full participation in the community itself becomes a secondary objective, particularly in light of the data suggesting such a predilection towards boundary trajectories. Few participants exhibited an overt inbound trajectory suggesting that full community membership was the predominate goal; as such, ascribing to mutual engagement and a shared repertoire of practices towards some joint enterprise (Wenger, 1998, p.152) becomes less instructive in this instance. What is instructive, and on what this research focuses, are the movements through fields of activity (informal, formal, socialized, individualized) and through multimemberships being structured and evidenced through mobile technology. It is in tracking the trajectories through this nexus of multimembership, rather than maintaining a gaze on the community of practice itself, that we might see accurate presentations of peripherality.

Yet, this focus on learning trajectory as opposed to community of practice theory does not negate the importance of community; community remains the point towards which much of this learning activity is being oriented. It structures this research just as it partially structures the social topologies of these graduate students as graduate students. What this research is putting forth, however, is that the disciplinary community of practice does not *inherently* exhibit the greatest pull on these trajectories. Professional communities and informal or socialized communities exhibit pull as well. The next section discusses how these communities, and the trajectories being exhibited by these graduate students in relation to them, can co-exist simultaneously through the nexus of multimembership.

9.3: Community & Non-Exclusivity

The shared sets of practices and artifacts across all these communities suggests a flow of activity across informal and formal spaces, with practices from one being appropriated, adapted, and applied in another. This flow of activity also posits a learning trajectory within a predictable context. If these graduate students are sharing artifacts and practices across their communities, then a trajectory is less a departure from or towards one community and more a movement within a particular context where all the communities are present simultaneously. Figure 25 presented further in this section attempts to illustrate some of the overlapping practices and artifacts shared by these communities. Please note that these are but three of the communities mentioned in the data with only select attributes presented; depending on the granularity of the analytical focus, these could vary considerably. However, it should serve to illustrate that trajectory, when presented as movement through a set of overlapping communities, isn't a mutually exclusive direction; a movement in this context could present both an inbound and a boundary trajectory simultaneously, for example. The artifacts and practices for enacting multiple trajectories are present and are, to some degree, already being shared.

Technology, including but not exclusive to mobile technology, are the means in which these artifacts and practices are enacted. However, mobile technology more than merely *allows* these artifacts and practices to be enacted; they *structure* the way they are enacted and subsequently evidenced.

> "By changing the communicative ecology of our daily practices, and the way in which we interact with the collective resources of our social memory, technology contributes to transforming our conceptions of what

> learning is: our expectations of what people should master, and how human skills should be cultivated" (Saljo, 2010).

The communicative ecology is structured through mobile technology in a variety of ways, some of which are deceptively simple. For example, a graduate student manages separate threads for different communities in one mobile application. These communities are made proximal through mobile technology; thrust together in the same application, their proximity erodes the complexity of their peripheral engagement. The practice sharing across these communities is predicated in part on the practices of managing mobile communication, or the management in many of these graduate students of the practices associated with KakaoTalk.

Technology in this sense is transformative for both the individual looking to participate in the community and the community itself. It is a marker along a trajectory towards participation, or as discussed in earlier chapters, evidence of engagement itself. This was the case for the majority of the participants who signaled at least some form of participation in at least one community through mobile technology, or, conversely, some form of subversion through a disengagement with mobile technology. The use of mobile technology to enact that participation in a community is especially revealing as it is one of the few engagements shared by all the communities identified in this research (social, informal, professional, disciplinary, etc.).

Mobile technology is also an artifact, or set of artifacts, of the communities. "Participation involving technology is especially significant because the artifacts used within a cultural practice carry a substantial portion of that practice's heritage" (Lave & Wenger, 1991, p.101). The "cultural practice" being employed in

this use of mobile technology by these graduate students include the South Korean sociocultural practices of socialization, the disciplinary practices associated with the humanities, and the informal, individualized, or socialized practices of mobile technology use in the South Korean context. It is through these practices, artifacts, and technologies that a shared repertoire emerges (Wenger, 1998, p.82), or a set of resources for collectively negotiating meaning. This shared repertoire as presented in this thesis does not negate the shared repertoire at work in any one disciplinary community of practice; rather it chooses to extend this shared repertoire into the social topologies being evidenced and structured by mobile technology. Mobile technology is repositioned not as merely being an artifact of one community's practice, but rather the environment in which multimemberships are managed. These mobile environments have their own shared repertoire, a repertoire that provides, in some instances, a conduit to the disciplinary community of practice. Graduate students often navigate the mobile shared repertoire to arrive at the disciplinary shared repertoire.

The following illustration provides a brief illustration of this broader shared repertoire across three of the communities present in the data: the disciplinary community (humanities), the professional community, and the socialized community (informal, friends or social circles; charted as one community for the purposes of this visualization) all being managed at the nexus of multimembership through shared practices (sociocultural practices, mobile technology practices, media & learning practices).

Figure 25: The Nexus of Multimemberships and Shared Practices

Further, this illustration suggests the tendency in the data for these graduate students to define community boundaries only in their most formalized instance (a group project in a particular class or a mobile design project, for example), suggesting an awareness of and engagement with boundary objects (shared practices, for example) but without a clear delineation of boundary for the community itself. For example, when a graduate student presented evidence of their mobile technology use for field data collection (a practice shared by both the professional and disciplinary communities), in a design experiment (a practice exclusive to the professional activity), they reported an awareness that this was a practice specific to the professional community involved in mobile design. When this same emphasis on field data collection appeared in another graduate student,

this practice was strongly associated with the disciplinary community. While parts of the shared repertoire used by both these professional and academic communities within a particular domain, or towards a joint enterprise involved sharing practices with other communities and domains, presented themselves in the data, the association of a particular practice with a particular community is predicated in large part on the affinity of graduate student towards that community. The trajectory is cohered through the expressive content presented.

When the graduate students engaged in formal disciplinary activity, submitting a textual essay for example, they were aware of the boundaries of that activity and what constituted accepted disciplinary practice; this was reported primarily in the interviews in relation to the requirements for the assignment, the research needed to complete it, the group work involved, and so forth. However, when they were engaged in less formal and more tacit aspects of community engagement, there was significant overlap with the other communities with which they were engaged. Hence, there is evidence throughout the data of communicative practices spanning the various communities: email being formal and regulated to faculty, KakaoTalk for use in collaborative activity, and so on. When discussing informal or socialized learning practices that span several communities, these graduate students expressed little to suggest a permeable boundary in place between them. These practices, however tacit, remained available for use across all the communities, engaged with freely and as necessary.

Exclusivity was not a defining characteristic of community participation amongst these graduate students, except at the most formal of levels. Without exclusivity in the use of practices, artifacts, or even technologies, boundaries are fluid, and being perpetually negotiated by these graduate students. They are formalized in their more formal discrete artifacts (curriculum, classroom activity, formal essays

or assignments), defined to some degree in their "mutual engagement" on an indigenous enterprise (Wenger, 1998, p.85), but remain fluid elsewhere (socialized interaction, informal learning practices, etc.). This overlap and inclusivity, this blurring and navigation of the "semipermeable membrane" (Potter, 2012, p.6) can render as a positive methodologically, pedagogically, or analytically. However, it is as likely to be manifested as a negative, making participation confusing, erratic, or even causing a withdrawal from activity altogether (Gourlay, 2009), thus initiating an outbound trajectory. Yet, these outbound trajectories were sparse in the data.

These multimemberships and the "competing demands of the various communities with which they identify" (Oliver & Carr, 2009), presented themselves in the data generally in a complementary manner. These graduate students borrowed practices from one to use in another, iterating to fit practice to this *other* community. There was evidence of subversion in select participants, but it would be tenuous to suggest that this was exclusively due to the competing demands of the various communities. These graduate students expressing this subversion were emphasizing opposition in their narratives as an identity practice, less as a "trickster" or member bearing some malicious intent towards the community (a stance described in Macleod & Ross, 2011), but rather as a positive principle, a demonstration of identity or predilection through opposition.

They were willing to forego the technologies of community practice, many of the socialized practices, but adhered to the more formalized disciplinary practices of composition, dissemination, and an overall projection of studiousness. So, while on the surface this subversion suggests an outbound trajectory from the disciplinary community, further analysis complicates this. It can manifest as a selective inbound trajectory, one that avoids, or intentionally discards, many of the boundary objects shared by these communities while at the same time adhering to

the joint enterprise (Wenger, 1998) of knowledge production. Selectivity, or non-exclusivity, does not equate to an outbound trajectory.

The majority of the participants presented both inbound and boundary trajectories in their community memberships, not to be seen as mutually exclusive movements. As has been stated, an inbound trajectory towards one community can be a boundary trajectory towards another, if "the competing demands of the various communities" (Oliver & Carr, 2009) are managed. This was most evident in the trajectories of the students spanning the disciplinary and professional tracks in their humanities programmes. The graduate students engaged in professional tracks were still taking courses on media theory and media studies; as such, they are inbound professionally and on a boundary trajectory academically.

The burgeoning identities of these students provided further evidence of these trajectories: graduate students as academics or graduate students as professionals, graduate students as peers or group members, and so on. Many stated clearly their allegiance to one community or another. Aside from those who presented subversion to particular practices, these allegiances were not inherently exclusive. Allegiance to one community did not mean a lack of participation in others. This stated allegiance found in some of the graduate students suggests an inbound trajectory, where the graduate student is actively seeking to move towards the center of the community, or to achieve full membership in the community of practice. Some *desired* to be full members, yet *maintained* membership in other communities simultaneously. The expressive content of affinity or narrative intentionality therefore is foregrounded to identify the trajectory or community that holds sway.

The inbound and boundary trajectories, in particular, suggest an additional concept that parallels and even complements the investigation taking place in this thesis. This is a self-trajectory, or trajectory of the self (Giddens, 2013), and it is complementary to the learning trajectory approaches presented in this thesis. Self-trajectory is a set of reflexive practices that the individual uses to craft a self-identity that charts a "trajectory across the different institutional settings of modernity" (Giddens, 2013, p.14). Broadly speaking, it means that each of us not only 'has', but lives a biography reflexively organised in terms of flows of social and psychological information about possible ways of life." In the broadest sense, this suggests further intentionality (echoing Bruner) in the individual to craft their narrative through practice, to chart their own trajectory amidst the myriad of institutional and communities they pass through. In the narrower sense, the one most applicable to this research, a self-trajectory suggests that these graduate students exist within and through communities, but are bound, ultimately, to self-development. Self-trajectory involves reflective practice, practice that attempt to both "correct" the past as "the autobiography is a corrective intervention into the past, not merely a chronicle of lapsed events" (p. 72). Further, it is the enactment of the desired future or the "building/ rebuilding of a coherent and rewarding sense of identity" (p.75). This was present in the data. There is evidence of the desired future in the intentionality of their narrative data, evidence of the narrative as corrective intervention into the past in the discussion of past projects or community engagements, all structured by "possible ways of life."

The graduate students participating in this research were remarkably articulate when discussing their community participation, and the technologies and practices used to enact that participation. They were coherent in their presentation of their position amidst their multimemberships, and acutely aware of their limitations in regards to certain community expectations or practices ("I

need to be better at….", "I am not creative, so I need to…", etc.). This is not a "generic reflexive monitoring of action" (p.76) but rather a continuum of activity where the individual is testing the appropriateness of their activities and practices in light of community interaction and feedback. This self-reflexive practice provides evidence that charts the self-trajectory. Thousands of decisions and interactions, reflected and iterated upon, all bound to some degree in a community context, ideally providing a greater and greater sense of autonomy for the individual. It is a transformation, or curation, of the self.

It would be counter-productive to remove mobile technology from these trajectories; it provides both evidence and context of the activity taking place. It carries with it the sociocultural practices of retraditionalized South Korean culture (Yoon, 2006a), the disciplinary practices of the humanities, the professional practices, the informal socialized practices, etc. It supports and contributes to these trajectories by allowing and constraining activity; it is pervasive in the South Korean context under investigation. The use of mobile technology to create a self-narrative, to engage in reflective practice, to participate in a community, all suggest an evolving idea of mobile learning in a fluid interactional context amidst multimemberships.

It also places great pressure on the totalizing aspects of learning trajectories, whereby movement in relationship to a community are driven by the desire for community membership; these graduate students through their participation in a graduate programme have signaled their desire to be full members of that community, a position this research challenges. This totalizing perception of learning trajectory, it should be noted, was not Wenger's intent:

> "A nexus does not merge the specific trajectories we form in our various communities of practice into one; but neither does it decompose our identity into distinct trajectories in each community. In a nexus, multiple trajectories become part of each other, whether they clash or reinforce each other. They are, at the same time, one and multiple" (1998, p.159).

While varied, these learning trajectories often foreground the community over the development of self, suggesting further adaptations are needed.

9.4: Learning Trajectories Adapted: Pragmatic and Conceptual Shifts

Ultimately, the purpose of this research is to chart an *overall* trajectory or trajectories towards, away, or by a *particular* community or communities, rather than chart a myriad of activities that fail to coherently present an overall direction when aggregated, and so caution was applied in the following adaptations.

However, it was clear from the data that the existing categorization of this data into inbound, outbound, and boundary trajectory was incomplete. In select cases, there was ambiguity as to what was being evidenced in the data to suggest a particular trajectory, or to say with any certainty that the trajectory being suggested was instructive. There was evidence that inbound, outbound, and boundary trajectory, while useful overall for establishing a *general flow* of activity, required more sophistication in their positioning. As such, the author provides suggestions on how these learning trajectories might provide more nuance in their identification of an overall trajectory, yet not forsake suggestive details. This represents an attempt to re-establish the complexity of these presentations of contested, highly contextual movements that aggregate into an overall trajectory.

These adapted trajectories should not be viewed as standalone trajectories as such, ones designed to supplant or even expand Wenger's existing learning trajectories. Rather, they are supplemental additions that are designed to account for the movements suggested in the data that were not accounted for by the existing learning trajectories. As such, they represent an analytical need for this research. They attempt to position learning trajectory less conclusively, an almost inevitable movement in relation to a community, but rather as a contested, occasionally contradictory, yet still suggestive movement. There are conceptual implications for these adaptations, however, that are discussed in subsequent sections of this chapter. The following tables briefly outline these adapted trajectories suggested by the data.

Adapted Trajectory	**Definition**	**Rationale**	**Evidence**
Oscillating Trajectory	A trajectory suggesting an overall movement towards one community (an adaptation of an inbound trajectory), but with the presence of activities that nominally or inconclusively subvert this inbound direction.	Consistent presence of subversive activity. Viewing the overall trajectory as an aggregation of activity, practices, and technology use, yet still maintaining the tension of the activities that seemingly contradict that overall trajectory.	Jisoo's subversion of particular collaborative and technological practices
Liminal Trajectory	Adapted from boundary trajectory, legitimate peripheral participation	Many participants exhibited multimemberships without demonstrating a centering	Jinsoo's suggested stoicism

	(Lave & Wenger, 1991) and the nexus of multimembership (Wenger, 1998), liminal trajectory is defined as the state of simultaneous peripheral participation that exhibits little indication of centering. Individuals in this category reside in this nexus of multimembership without centering towards any one community.	movements towards a particular community. "The work of reconciliation necessary to maintain one identity across boundaries" (Wenger, 1998) presents itself in these narratives not as 'work' as such, but as an accepted, if contested, system of activity.	providing no clear community affinity; Mia's ease with her membership across several communities

Table 21: Adaptations to Learning Trajectories

The first adaptation that the data necessitated was one that acknowledged selective movements within an overall trajectory, or what the author refers to here as an *oscillating trajectory*. Oscillation in this instance refers to activities within a range of activity that do not directly contribute to the overall trajectory, or in fact subvert certain aspects of that trajectory. These are acts of subversion that might curb, but not alter the overall direction of, a particular trajectory. This oscillating trajectory does not supersede inbound trajectory, but rather problematizes viewing these learning trajectories as monolithic rather than as aggregations of activities and practices suggesting an *overall* trajectory. Oscillation is the

movement that does not cohere with the overall trajectory being presented, but might still prove instructive analytically.

The second adaptation, *liminal trajectory*, presents an adaptation of the boundary trajectory. It is defined as the state of simultaneous peripheral participations that exhibit little indication of centering towards any one community. Individuals in this category reside in this nexus of multimembership but demonstrate little indication (or even desire) of centering towards a particular community over another, or passing across the threshold of disciplinary or professional practice (Gourlay, 2009), a passage that could be construed as being *transformative* and *irreversible* (Meyer & Land, 2003). Rather than thresholds, there is a static positioning of the self in relation to several communities at the nexus of multimembership. This liminality might suggest an adaptation of "not-yetness" (adapted from Collier & Ross, 2016 Forthcoming), whereas the graduate student is not in a position to enact a boundary crossing or full inbound trajectory. Learning trajectories, while signalling intent, also signal capacity for undertaking transformation as community member. For some, this liminality was a manifestation of not-yetness where the opportunity for full membership in either the professional or disciplinary had yet to appear, or where the preference was for multimemberships without centering towards one particular community.

Yet, this liminal trajectory presented itself differently in the data depending on the participant, particularly from those strictly managing their professional and academic community participation through sheer pragmatism. The nexus of multimembership is maintained through considerable effort, effort that is designed to maintain an *existing* position. This is pragmatic insofar that these graduate students are often not in a position to enact full community membership in either the professional or academic community due to their novice status and

lack of completion of the formal programme of study. So the liminal trajectory being enacted here is often one born from pragmatic considerations. Yet, these were not the only liminal trajectories being evidenced.

Some were expressed by those registering uncertainty, stoicism (Jinsoo), or even apathy. Although not present in the vignettes, four participants in the overall dataset cohered considerable apathy (explicitly in their interviews and reflective prompts and implicitly in the lack of expressive content in their mobile artifacts) to their community participation based on obligation or duty, or having to meeting minimum requirements rather than any overt predilection or affinity. This presence of apathy was true across both their professional and academic community participation and although outside the scope of this research, suggests a need for further research on the role of *obligation* and *duty*, particularly in the South Korean context, over *affinity* and *identity as* predictive variables for trajectory.

These liminal trajectories suggest that a movement of almost no movement, an *effortful stasis*, aside from the activities necessary to maintain identity, or "the work of reconciliation necessary to maintain one identity across boundaries" (Wenger, 1998), is itself a trajectory. These graduate students are not full-fledged community members on some sort of insider trajectory, there is no evident peripheral trajectory (indeed, it is the lack of movement towards a particular community that is suggestive), and no apparent inbound or outbound trajectory. There is in this trajectory is a variation of the boundary trajectory, yet one revealing in its apparent stasis. These participants present evidence to suggest the considerable effort necessary to *maintain* their position amidst the nexus of multimembership, rather than center towards any one particular community. It should not be mistaken for the stasis of inactivity, but rather the stasis of effort.

Ultimately, what is presented is that several of these graduate students are in states of simultaneous liminality, essentially managing their peripheral participation in several communities simultaneously without suggesting a centering towards any one individually.

9.5: Conceptual Shifts: What these adaptations mean for the research

These adaptations present implications for this research. To begin, acknowledging incoherent or contradictory activities *within* an overall trajectory potentially limits the instructive potential of learning trajectories in this research. Every subversion, every contradiction, every incoherent activity creates tension within an overall trajectory; with enough of these oscillations, the learning trajectory proves untenable as it calls into question the movement being suggested throughout the evidence. While this variation is positioned as both a necessary adaptation (there was too much evidence to ignore these oscillations) and analytically rich, it is important to note that this problematizes the learning trajectories themselves. For example, if an overall inbound trajectory presents considerable oscillations within it, oscillations that contradict or subvert the overall movement, does this suggest the ephemerality of the inbound trajectory? These oscillations, beyond being necessary based on the data presented, can make learning trajectories more robust mechanisms for charting activity. They begin to identify the tensions in the interactional context created by these graduate students to engage learning across their social topologies. Even if ephemeral constructs of trajectory, they remain instructive.

Acknowledging these oscillations within an overall trajectory also foregrounds subversion as a common activity, particularly in the disciplinary, formal space. Foregrounding subversion also demands further analysis into whether the

subversion represents an intentional state entailment (they are actively and explicitly attempting to subvert practice in a particular community), a byproduct of multimemberships demanding reciprocity and practice sharing (subverting those practices that can't be shared), or some variation thereof.

Conceptually, a liminal trajectory foregrounds time itself as a governing dynamic. Time is not generally accounted for in this thesis aside from the length of time necessary to complete the data collection; this research makes no pretense to being even an approximation of a longitudinal study. Yet, this liminal trajectory, a trajectory of effortful stasis, suggests the role of time in structuring an overall trajectory in the longer term. It is conceivable that this liminal trajectory, particularly across the disciplinary and professional communities, cannot be maintained indefinitely; one will inevitably be centered towards as academic programmes are completed and employment prospects are realized. It is possible to conclude that liminal trajectories are generally born of necessity; centering for some is not pragmatic or even possible. As such, time is foregrounded as a governing principle structuring these trajectories.

Additionally, these adaptations further reveal the *laminate* nature of learning. Learning trajectories represent multiple layers, or laminates, of activity presented as a unified field of activity. Figure 26 below, presented again here in this chapter, illustrates the social topology of the student. There is interaction with artifacts & media (black icons in the figure below), interaction across formal, informal, socialized, and individualized practices (orange icons), all structured and evidenced by mobile technology (green). The movements between these artifacts, practices, and technologies, represented by the blue arrows in the figure below, problematize learning trajectories in that they become more ambiguous in their suggestions and ultimately less predictive. The two adaptations presented here,

oscillating and liminal, suggest movements that do not cohere into an overall trajectory. While analytically more nuanced and ultimately more robust, it is important to note that these adaptations have implications both for this thesis and for learning trajectories overall.

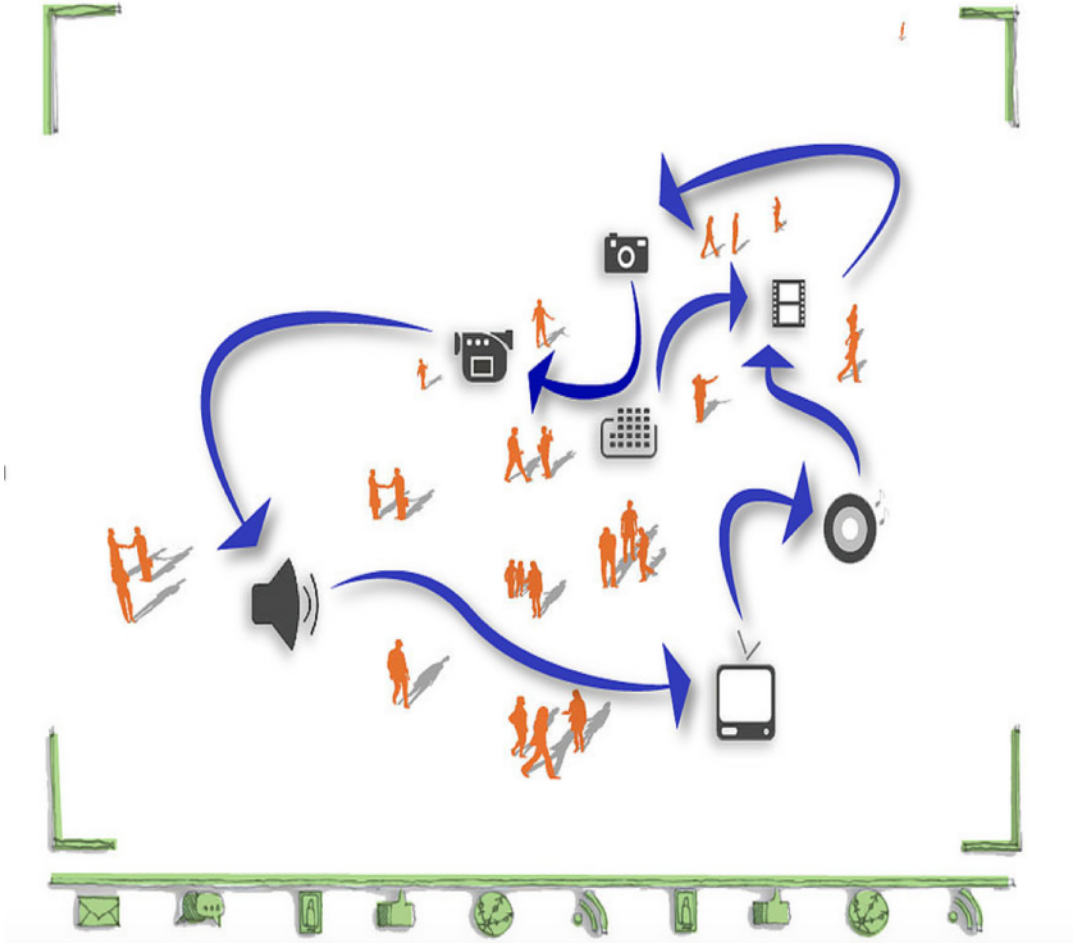


Figure 26: Social Topologies Revisited

Further, these adaptations reveal how interdependent these laminates are, which has conceptual implications for this thesis. Which laminate is structuring which? Mobile technology structures learning practices and therefore structures community participation. Mobile technology is governed by South Korean sociocultural, disciplinary and professional modes of communication. Practices, artifacts, and technologies evolve or are discarded as a result of this activity.

Participation and identities are redefined constantly. A complex and confusing interactional context is constructed amidst the cycle of activity. So, whatever trajectory is being evidenced is shifting. These shifts foreground the importance of the aforementioned social topology, a space that acknowledges the shifts, permutations, and deformations emerging from this interactional context.

9.6: Multimemberships and Social Topologies

Almost all the graduate students involved in this research demonstrated their simultaneous involvement in multiple communities: disciplinary, professional, and informal social communities being the most readily apparent. These students demonstrated little overt evidence of conflict in maintaining their participation in their communities, a presentation that sits slightly at odds with the prevailing research regarding multimemberships and identity management. While the research presented in this thesis is not specifically focused on community identity, it is important to identify the role of reconciliation on learning trajectories. Wenger states in reference to multimemberships that there is considerable "reconciliation necessary to maintain one identity across boundaries" (1998, p.158). Oliver & Carr (2009) suggest that multimemberships are problematic due to the conflicting nature of reconciliation:

> "... the simultaneous membership of different groups is framed as inevitable but complicated. Each community holds its members to account, expecting particular kinds of commitment and behaviour; thus overlapping communities may come into conflict. This can lead to difficulties, such as the feeling that one's identity is fragmented. Work is often required to reconcile different practices, and to maintain a coherent identity."

It would seem that the residue of such fragmentation or difficulty would be present in the data, but this was not fully the case. Multiple identities were crafted to fit particular communities as evidenced in several of the vignettes where practices and activity varied considerably from disciplinary to professional community participation. However, their reconciliation into a coherent whole was not overtly, or convincingly, presented as problematic; those presenting subversion were not seemingly discomforted by these acts eschewing community practices. They simply did so and were able to articulate why. Often, their subversion was due to their preference for an individualized practice or that the practices of one community maintained precedence over another. Indeed, the reconciliation was present and required significant effort, but it did not overtly present itself as being conflictive or generating some sort of fragmentation.

These graduate students generally were able to clearly articulate what their identities in relation to these communities were; this articulation was influenced by South Korean communication practices made evident by reference to “my seniors”, “my major students”, “my faculty”, “my future media career”, and repeated mentions to “we”. There was clear, if overlapping, ownership or investment in community participation. Yet, the interaction between these multimemberships is critical to understanding the flow of activity from one community to another, an understanding that seeks to identify how practices emerging from informal and socialized communities can often influence the structure of engagement with more formal communities. This exchange and adaptation of practices along the nexus of multimembership, highly evident in the data, suggests a less fettered flow of activity from the informal to formal than much of the research on learning trajectories and multimemberships presents as the norm. For example, Jisun, Mia, and Kyungsook all alluded to mobile practices emerging from their informal social communities that were used in disciplinary and professional practices:

photography as memory aid or proxy for note-taking; informal video capture with mobile technology imprinted on professional practices involved with 'blocking'; and KakaoTalk as a core application for disciplinary activity, repurposed from informal, socialized use.

The research supports the underlying activity presented above, suggesting it as a continuation of existing South Korean sociocultural practice. Ok (2011) provides evidence that blogging and social media do not represent a departure from existing cultural practice, but rather affirm the tendency of South Korean learners to use these spaces as a means to "build and maintain social relationships" rather than as exclusively academic, information-sharing spaces, a theme picked up throughout this thesis in reference to Yoon's (2003) retraditionalized practice in mobile technology. These technologies become conduits for managing social relationships through which in turn can be used to manage disciplinary or professional participation. Ok (2008) and Hjorth (2007b) outline the process of informal media capture and creation via mobile technology and its effect on informal community culture and processes, yet very little research exists in the Korean context to explicitly support the effect of informal technological and social practices on formal communities, particularly disciplinary or professional ones. Yet the data presented in this thesis is suggestive that this is indeed what is happening: the informal is structuring entry or engagement with the formal via this nexus of multimembership. Technologies are being used to inform disciplinary practices, applications are being repurposed or augmented from purely informal and social tools to disciplinary and professional ones, and learning practices are being drawn along this nexus of multimembership from the informal to the formal. The research suggests a freer flow of activity from the informal to the formal and vice versa than what has been suggested and what this author believed before setting out on this research.

What this flow of activity across the nexus of multimembership suggests is the importance of space itself in mediating, even structuring, this flow. If these graduate students are participating simultaneously in multiple communities and if this participation has been orchestrated in such a way to allow for a relatively unfettered flow, then the space in which this activity takes place is of significant importance. Wenger-Trayner & Wenger-Trayner (2014) position this space as inherently dynamic:

> "Identity is a nexus of multimembership. Identity also comes to reflect the multiplicity of locations of identification that constitute it. Multimembership is sequential as we travel through the landscape and carry our identity across contexts. It is also simultaneous as we belong to multiple communities at any given time…And so is the work of experiencing all these forms of identification at once and in one body – whether they merely coexist or whether they complement, enhance, or conflict with each other" (Wenger, 2010).

This positioning allows for community overlap, oscillation, and liminality while maintaining trajectory or trajectories; as such it is a useful, but incomplete, metaphor for charting this activity. Landscape suggests if not a fixed then a bounded environment in which social activity is taking place, a nod to sedentarist positions of mobility and context (Urry, 2007). While this remains true to some degree, it presupposes boundaries drawn in reference to practices, practices bound to community participation. This was less evident in this data, where practices were shared, adapted, and used throughout the social topology of the graduate student, which in turn *evolved* the social topology itself. So, the environment shifts

along with the movements of the graduate student, engaged as they are in the peripherals of community.

So there is a return to social topologies as fluid, relational spaces where context is formed and shifts with activity. Social topologies (Bayne et al., 2014) reference the way in which students in digital environments 'assemble' or enact space in order to create opportunities for participation; it assumes students are situated within a fluid topology at least partly of their own design. It also assumes a space perpetually being constructed and amorphous. These social topologies bend and shift, but do not tear.

This is further complicated by the focus in this research on mobile technology, which suggests an additional layer of complexity in identifying a social topology: mobility and its capacity for creating community present a general fusion of the informal and formal space. This is accelerated by the capacity of mobile technology to allow for participation that satisfies any number of needs: South Korean sociocultural practices of reciprocity, the collaboration and group projects associated with community practice, field work and data collection, orientation, and so on.

In summation, this section addresses the influence of multimemberships on community participation, how multimemberships, in some way, made possible the relatively free flow of activity from the informal to the formal. The nexus of multimemberships that connects these communities suggests that space itself is a critical factor in identifying learning trajectories. It is in these graduate students' movements within this space that we begin to see how mobile learning itself is being enacted.

9.7: Trajectories and mobile learning

For most in this study, it is through mobile technology that much of this community participation takes place, where these community memberships are managed, and where feedback is sought in informal, social communities. For most, it is through mobile technology that evidence is presented of reflective practice, iterations on past activity, and renewed socialization around these iterations. For most, it is through mobile technology that there is evidence of practice sharing and adaptations or subversion of those practices. For this study in particular, it is through mobile technology that we are able to chart trajectory based on activity, practice, reflexivity, and technology use.

Mobile learning is positioned as reflexive activity around multiple learning activities extending through multimemberships. This reflexive activity is foregrounded with Kress & Pachler's (2007) positioning of mobile learning through habitus, "the life world of the individual framed both as challenge and as an environment and a potential resource for learning". This habitus is transformed in mobile learning through reflective practice; it is also partially transformed through the research design itself and their participation in this study. These graduate students presented narratives, cohered or subverted those narratives through mobile artifacts, and then reflected further on this presentation through prompts. Yet, this reflective practice was evident within the discrete data types. The interviews presented evidence of adaptations to practices and activity through social feedback, whether faculty or peers. The mobile artifacts suggested informal socialized practice being adapted in formal spaces. So evidence of reflective practice, and consequently habitus transformation, existed throughout the data.

There are movements of reflective practice, a constant evaluation of iteration of their activities and their suitability for enacting community activity. They presented evidence that suggested a constant iteration of their own habitus, or particular dispositions to particular communities or practices or activity, based on feedback received, a particular trajectory sought, or an affinity towards a particular group. So the cognitive mobility (habitus) is enacted through space (the social topology) and evidenced through mobile technology. All shift as a result of transformation. All of this suggests a transformative learning approach, and suggests that adopting and iterating on Kress & Pachler's (2007) definition of mobile learning has merit for further research and analysis.

The data presented by these graduate students also correlates to the overall definition of mobile learning as provided earlier in this thesis: learning that occurs across multiple contexts and learning that encapsulates public and private processes (Sharples, Taylor, & Vavoula, 2007). These graduate students moved throughout their communities with little apparent restriction. "Nearness" (Ross et al., 2013) towards one community over another is not strictly based on affinity; it is assembled. Many of these graduate students make effortful arrangements of activity that suggests nearness to many communities. It is discretionary, but not exclusive. These multimemberships and the nearness required to engage them suggest the mobilities made possible through mobile learning definition as advanced in this thesis.

There is contextual mobility across multiple interactional contexts (Dourish, 2004) as these students manage their multimemberships. There is categorical mobility as learning shifts between activity that fluxes between individualized and socialized states of activity with movements across informal and formal contexts (Park, 2011). Throughout this thesis, there is evidence of cognitive mobility as

these graduate students shift between these contexts and categories, adapting and evolving practices as needed; material mobility is evidenced through the range of media and data being collected and presented. There is spatial mobility and the artful engagement with their space "to create impromptu sites of learning" (Sharples, Taylor, & Vavoula, 2007). From the physical space of coffee shops to commutes, from the intimacy of a bedroom to the din of a public study room to the social topologies being suggested throughout the data, the types of mobility being presented here suggest a broader position of mobile learning than is generally advanced in the literature.

9.8: Context Generation and Graduate Student Participation

Many of the uses of mobile technology presented in this thesis reveal practices not directly related to, but that inform the formal learning process. An example of this was the orientation activity described by Jisoo, a practice of taking photos of unfamiliar landscapes to make them more familiar. This student enacted a process of taking more photos and videos of the new environment in an attempt to "try and make it seem more meaningful" or to get more "accustomed to their ways." The language used emphasizes the need, almost an imperative, to transform the unfamiliar to the familiar.

This practice exists outside formal learning, but directly orients the graduate student to perform formal learning activities. Until this orientation takes place, the unfamiliar campus poses little value to the graduate student in their engagement with their discipline. This unfamiliarity not only limits the usefulness of the campus for possible learning or disciplinary interaction, it actively generates anxiety. The graduate student is developing context through a process of familiarization whereby the foreign is made familiar. Subsequently, this familiar

environment is used to engage learning. This context development extends beyond merely informing the learning process; it is possible to say that the subsequent learning is predicated on it. The mobile technology in this instance *allowed for* the possibility of disciplinary participation to occur, an allowance that the graduate students were still required to operationalize through their learning orientation and learning activity.

In this case, the context development is being initiated through the use of mobile technology ("I try to take more picture and videos of the new environment and try to make it seem more meaningful"). It also points to the necessity of 'nearness' (Ross et al., 2013), or the assembly of context, for the purposes of learning engagement. Without this orientation practice, the graduate student might not have satisfactorily constructed a nearness in which to formally engage her discipline.

It is through this context generation and the ability of these graduate students to articulate the practices and motivations involved in this context generation that there is evidence of a sophisticated meta-awareness of how practices, media, mobile technology, and memberships are assembled, and subsequently shape, meaning. Much of this reflexivity and meta-awareness were present in the interviews. This meta-awareness suggests an evolving sense of reflective practice, one that poses potential for learning but also risk as these students:

> "can be seen to increasingly display a new habitus of learning, in which they constantly see their life-worlds framed both as a challenge and as an environment and a potential resource for learning, in which their expertise is individually appropriated in relation to personal definitions of relevance and in which the world has become the curriculum populated by mobile

> device users in a constant state of expectancy and contingency" (Pachler, Bachmair, & Cook, 2010, p. 25).

It is here in this discussion that the link between an *expectant contextuality* (the belief that something will happen) and *contingency* (preparing for or enabling that something to happen) is manifest. In the formal disciplinary sense, there is the community itself -practices, activity, participants, technology- all creating a persistent expectation of activity. In some cases, this expectation of disciplinary activity, coupled with the expectation of socialized reciprocity, led to a subversion of the practice involved. In some cases, this expectation of disciplinary activity stimulated the adaptation of informal mobile practices for formal use (group discussions in KakaoTalk, for example). So, there is both expectation and contingency mediated through mobile technology leading to the development of context. This positions interactional context (Dourish, 2004) as co-constructed (shaped by actors, from community to activity to technology, and so forth).

What remains clear though is the strength of the relationship between mobile technology and its effect on learning context; it makes learning both an expectation and a contingent activity as "learning is viewed as culturally situated meaning-making inside and outside of educational institutions" (Pachler, Bachmair, & Cook, 2012, p.25). As such, the interactional context itself becomes a fluid state of expectation and contingency, of movements between formal and informal, between socialized and individualized states of activity structured by mobile technology and drawing direction from South Korean sociocultural practices. This is a more robust presentation of mobile learning that moves beyond the deterministic, one that begins to flesh out the definition put forth earlier in this thesis emphasizing mobile learning as

> "constantly mobile, which does not refer, necessarily, to a physical mobility at all but to a constant expectancy, a state of contingency, of incompletion, of moving toward completion, of waiting to be met and 'made full' (Kress & Pachler, 2007).

Yet this learning context, despite emerging from the activities and expectations of the graduate student, is further governed by sociocultural practices specific to the South Korean context. These are discussed in the following section.

9.9: South Korean culture as a contextualizing agent

The focus of this section will be on the role of South Korean culture as manifested in social, peer relationships, as well as in social media and mobile technology use. These roles impact and shape the uses of mobile technology as described in this thesis by providing an interactional context in which to perform this activity. These roles also have bearing on how these graduate students chart a trajectory in relation to their discipline.

9.9.1: Seniors and Social Relationships

The first relationship, "senior-junior", involves the hierarchical, yet ultimately peer relationships that govern much of the mobile technology use described in this thesis. These hierarchical structures emerge from, and are occasionally subverted from within, a Confucian tradition. As such, Confucian tradition and its significant effect on the structure of higher education (Shin, 2012) and socialized practice around learning (Tamai & Lee, 2002), are treated as a contextual layer, or laminate, of practice that at least partially governs and structures much of the activity presented in this thesis. It is a laminate that works in cohesion, if not coherently, with the other laminates of activity and tools presented thus far

(mobile technology use, informal mobile culture, formal disciplinary practice, etc.). It is treated as a potent, yet ultimately interdependent agent, rather than an all-encompassing, independent entity.

South Korean higher education itself is a direct result of Confucian tradition as many of the earliest learning organizations were Confucian academies, the most notable being Sungkyunkwan which was established in 1398 and still exists as a university to this day (Lee, K.B., 1984); some have gone so far as to see Korean universities as a direct extension of Confucianism (Tamai & Lee, 2002). Confucian tradition pervades the structure of the humanities as practiced in South Korea, with an emphasis on wholeness and broad thinking, as opposed to the dialectical methods employed in Western traditions. What is more important to this thesis is the influence of Korean Confucian tradition on the social relationships, specifically the peer relationships, that exist amongst these graduate students and which in turn influence their use of mobile technology.

Yet, Confucianism isn't uniformly prescriptive. It is important to acknowledge the subtlety in the communication practices in younger, more educated, and urban segments of Asian societies (Zhang et al., 2005). This subtlety refers to the manner in which modern values (associated with individualism, social equality, and upward mobility) mix with Confucian tradition (social hierarchies emphasizing stability and order) to produce idiosyncratic social practices. This is indeed true with the participants in this study. However, there was significant evidence to suggest that age hierarchies, a principle closely associated with Confucian tradition and made evident in this through senior-junior relationships, were present in the communication patterns and mobile technology uses of these graduate students. The tension that results from modern values mixing with Confucian tradition was made visible in the subversion presented in several of the

vignettes. Depending on which held more sway, the individualism or the stability of social order, a subversion or rejection of one evidenced, at least partly, a trajectory.

This thesis now returns to the senior relationship as a means of presenting this. To reiterate, senior refers to a peer relationship where older students in the same major (seniors; not to be confused with their actual year in university) act as a type of mentor to the younger students, encouraging them to participate in specific activities and clubs, take certain classes, and chart a particular movement towards a profession. Much of the uncertainty of disciplinary practice as highly textual, tacit, and "partially hidden" and the attendant feelings of "confusion, inauthenticity and isolation, and a distinct absence of shared repertoire, mutual endeavour and expert-novice interaction" (Gourlay, 2011) are mitigated, for some, through this senior relationship. Evidence of this relationship was most explicitly evident in the narrative interviews and generally cohered through the mobile artifacts. This was most evident in the more socialized forms of disciplinary engagement, especially group projects and group study. There were screenshots of email discussions and texting exchanges, many of which captured discussions with seniors over appropriate courses of action. There was evidence of seniors encouraging use of a specific messaging application as it allowed for group discussions.

Some subverted aspects of this relationship in instances by removing the mobile application through which this senior discussion would take place, or by drawing attention to the tension that exists between a preferred, individualized learning practice and its use in a formal socialized setting. It is in this transformation from idiosyncratic individualized learning practice to a more formal, socialized disciplinary activity that further contours of the learning trajectory are presented

(Wenger, 1998) in relation to the discipline. Yet, it is a trajectory often partially modeled through the conduit of the senior-junior relationship.

9.9.2: Incoherence and maturity of the Korean mobile environment

There was some evidence to suggest that particular graduate students were cognizant of the fact that their individualized mobile technology uses and their socialized, and formal mobile technology uses were potentially conflictive. Many referred to uninstalling particular applications used for a particular group once the group had disbanded. Some criticized the use of mobile technology itself as a distracting influence, or a social deterrent, a position at odds with the socialized use of mobile technology in the group context. This incoherence, referred to in instances as subversion, manifested itself in different ways for different participants.

Much of this incoherence between mobile technology use is at least partly attributed to the maturity of the South Korean mobile technology culture and the use of social media within that mobile technology. This maturity in terms of mobile technology and social media use is partly due to the existence and penetration of indigenous South Korean mobile technology and social media platforms, themselves results of "the socio-cultural dimensions of its techno-nationalist policy" (Hjorth, 2009b). These indigenous mobile technologies and applications have provided these graduate students exposure to mobile technology use and the types of interaction that can occur through this technology in a familiar Korean language and cultural context. These aren't examples of South Korean graduate students appropriating foreign technology and adapting it to meet their own practices; these are indigenous applications and environments designed to facilitate a localized South Korean mode of socialization and communication.

This is an important distinction in beginning to identify the coherence that might exist between individualized mobile technology use and formal and socialized mobile technology use; these graduate students have had considerably more experience enacting and refining their informal and social mobile technology uses than their formal, disciplinary-oriented ones. Again, this is partly due to the maturity gleaned from the years of "ubiquity of customizing modes as consumers/users try to "domesticize", "personalize" and familiarize the devices into the rhythms of the everyday" (Hjorth, 2005). These "rhythms of the everyday" can be likened to "everyday practices" (Lankshear & Knobel, 2011) or the use of everyday practices to inform mobile technology practices. The everyday practices of community building, reciprocity, and peer socialization have found their online equivalent in the digital artifacts and environments of South Korean mobile networks. These artifacts are evidence of indigenous, sociocultural practices manifested online and through mobile technology.

More importantly, they are informal mobile technology uses that are informed by South Korean sociocultural practices, and, in turn, inform the practices that these graduate students use to participate in their discipline. They are sequences of practices that reveal that "learning occurs in and subsequently produces context in a fluid cycle" (Sharples, Taylor, & Vavoula, 2007). When practices adapted from informal to the formal fail to produce a desired context for interaction, when this process becomes less than a fluid cycle, it is acknowledged as many of these graduate students reported the stark differences in their individualized, socialized, informal, and formal practices and their own process of accommodating those differences. The majority of the participants reported that these practices generally co-exist.

To return to the previous example of Jisoo, who took pictures with her mobile phone to orient herself to her unfamiliar surroundings *before* any formalized or socialized activity was to be initiated, the individualized practice of orientation needed to be enacted. This was due, at least partly, to the fact that this individualized practice was somewhat idiosyncratic in nature, an everyday practice tailored to Jisoo's specific needs. This practice offers little value to the socialized and formal mobile technology uses discussed earlier, nor does it have an exact equivalent in either the South Korean Confucian tradition or the informal mobile cultures as defined. It is designed to create an interactional context for the learner to engage in socialized activity. As such, it creates a change in habitus for Jisoo; an everyday practice of making the unfamiliar familiar (informal and individualized) is then ported into a socialized practice (shared and discussed with friends) which generates an interactional context from which disciplinary engagement may take place. This informal mobile technology practice leading to formal participation suggests "new purposes":

> "Over time, the introduction of a new technology, with its specific and at times sharp-edged affordances/facilities, into a life-world generates newly shaped needs and new purposes. Initially the device is used according to the purposes brought from the most immediate past; yet using the device brings a change in the habituations of the user" (Kress, 2009, p.195).

Jisoo evidences this change in habituation quite readily in her orientation practice. Yet, the technology use is perpetually connected to the immediate past. The maturity of South Korean mobile technology use has, in some cases, reinforced or retraditionalized mobile social activity. By this it is meant that social practices at work in Korean society *outside* mobile technology are being appropriated and hybridized to some degree *in* mobile technology. The individualized practices

described in previous sections of this thesis (orientation, navigation, brainstorming) differ from the more socialized elements of mobile technology use, those most influenced by South Korean sociocultural practices. Yet, many of these South Korean sociocultural practices are being repurposed, or retraditionalized as "new technology is in fact perceived and consumed through local filters including social relations and norms" (Yoon, 2006a). The structures and shapes of these social relations and norms are enacted in mobile technology, but they are being mediated through a South Korean cultural lens and measured against their adherence or departure from Confucian norms in regards to social relations.

For every individualized practice using mobile technology, there is a social practice that upholds social hierarchy (seniors mentoring on proper technology use, for example). For every disciplinary practice of collaboration using mobile technology, there was a preceding informal practice of socialization. As discussed, there is reciprocity and subversion of that reciprocity. There is constant messaging through applications like KakaoTalk and consistent recording and sharing of lectures, notes, and research. Some of this activity isn't strictly designed for disciplinary learning or engagement; it is designed "to maintain peer relationships" (Yoon, 2006b). These peer relationships and their ongoing maintenance via mobile technology provide social capital (Kim, 2002), a means of not only participating in their discipline, but also in South Korean society itself. Hence the nexus of multimembership, as it presents itself in the South Korean context, is one structured not only by professional or disciplinary expectations, practices, or identities, but also by informal mobile technology practices and, perhaps most importantly, South Korean sociocultural practice itself.

Some adhere to disciplinary practices as modeled by seniors, some clandestinely maintain individualized practices and adjust to socialized practices when needed,

some pull away from mobile technology, and some are drawn to it as a means of maintaining their peer relations. It is a learning context from which these graduate students chart a trajectory towards the disciplinary community (inbound), away from the disciplinary community (outbound), or in parallel to it (boundary).

9.10: Seeking Coherence in the Mobile

Yet do these intersections and overlaps, this nexus of multimembership amidst a larger social topology, across modes and artifacts suggest an explicit coherence? Are these graduate students conscious of this coherence and does consciousness suggest evidence of Bruner's (1991) intentional state entailment? In short, are they presenting evidence to support a predetermined narrative and does that matter in relation to charting a learning trajectory? While there was considerable interview evidence and reflective prompt evidence to suggest this was the case, intertextuality is presented as a means of charting meaning across the data.

Intertextuality has been implicitly positioned in this thesis implicitly in a larger theoretical framework; as such, it is revisited now ahead of the ultimate discussion in this chapter on how all of these activities and practices cohere into a trajectory in relation to the discipline. This thesis has foregrounded coherence throughout the data collection and analysis process. Coherence was positioned as a means of triangulating findings from narratives emerging from the interviews across the mobile artifacts and reflective prompts. With coherence, this research is ultimately looking for *consistency* in terms of practices, activities, and themes emerging from the data in one instance (intertextuality) and *validation* in another (coherence). Do these graduate students present evidence across modes illustrating the same concept (consistency) and is the presentation of the same concept across modes corroborating or contradictory (coherence)?

Intertextuality is positioned in this thesis not as a means of charting linguistic meaning between texts, but as a means of charting coherency of the graduate students' narration across modes towards an overall learning trajectory. Intertextuality is of particular importance to this thesis as mobile technology has the capacity for potentially accelerating intertextuality. While it would be erroneous to view this as an inevitability or even desired outcome, it does suggest that mobile technology makes possible the evidencing of such intertextuality if and when it appears. As such, intertextuality is a pragmatic as much as a theoretical structure; it assumes that there is some level of connection being suggested by the graduate student across all their data.

This is evidenced throughout the vignettes, from Kyungseok's socialized practices emerging across her data; to Mihyeon's narrative of the importance of field work, followed by an explicit documentation and articulation of that field work in her mobile artifacts and reflective prompts. Even in the graduate students presenting evidence of boundary trajectories (Jisun, Kyungsook, and Mia), these boundary trajectories were not necessarily suggested by incoherence or inconsistency across their data, but rather a liminal trajectory, an *intentional* state of simultaneous peripheral participation across several communities. Intertextuality helped reveal instances when meaning stated or suggested in one mode might subvert or contradict another. Yet, even this subversion was coherently presented across modes: Jisoo stated it in her interviews, identified her preference for individualized practice in her mobile artifacts, and returned to the subject again in her reflective prompts.

Intertextuality also revealed instances when practice sharing across the informal/formal boundaries were employed, and ultimately assessed. Mia's

vignette revealed the tension involved in the socialized practices consistent with community participation, particularly the more formal aspects of critiquing and receiving feedback on other's work. Yet, Mia presented considerable intertextuality throughout her data, from her presentation of process throughout her data. For Mia, the tension exists in the critical assessments that emerge from the output of this process, the film itself. Yet, the tension is accepted as part of community practice; Mia's coherence across all of these practices and all these data points evidences the inbound trajectory to the professional community. Coherency proved critical for this thesis in establishing a structure for charting movement across what would have otherwise been disparate modes of data.

9.11: What do these learning practices and their coherence say about learning trajectories in relation to the disciplinary community?

Returning to Figure 25 and its presentation of the nexus of multimembership, we are reminded that community participation, particularly as structured by mobile technology, overlaps. Practices are shared, when possible, from one community to another. Practices are adapted as necessary when sharing is contested. Practices are subverted when sharing isn't desirable, or when another community practice is positioned as more significant.

This chapter has presented the themes of the influence of the informal on the formal, the influence of Korean sociocultural practices on the learning practices of these graduate students, the existence of an effortful liminality, the role of subversion, and so forth. All suggest a sophisticated social topology of coherent and disparate activity. As it applies to the disciplinary community, there is a continuum of learning practices evidenced through mobile technology and an *approximation* of disciplinary practices from orientation to fieldwork, media

creation, collaboration, data collection, and dissemination. As these graduate students are not full members nor on an insider trajectory, and rely on guidance from faculty and seniors, often tacit, for modeling practice consistent with community expectations, this approximation of disciplinary practice is an inherent limitation of both their activity and the scope of this thesis. This thesis is less concerned with full disciplinary participation and more concerned with practice *suggesting* a trajectory in relation to the discipline.

Several of these approximated practices are documented in the vignettes: Mia's peer collaboration and faculty interaction, Jisoo's documentation of a lecture, Kyungsook's socialized formal interaction on a group project, Mihyeon's emphasis on fieldwork, and Jinsoo's strict disciplinary orientation. The range of disciplinary activity is presented from which these graduate students are engaging and at times disengaging. What this thesis suggests is that these disciplinary engagements are largely structured by factors outside the disciplinary community.

The structure of these graduate programmes as hybrids of the professional and academic privilege inbound and boundary trajectories by ensuring that formal activity presents an inbound or boundary trajectory towards both, simultaneously. Students are taking coursework in both the disciplinary and professional, exploring technological uses consistent with both the disciplinary and the professional, employing practices employed by both communities. A focus on formal activity alone would be limiting in this regard as it would preclude that everyone enrolled in a formal graduate programme in the humanities was inevitably on an inbound trajectory. The data presented in this thesis serves to demonstrate that it is much more complicated than that. This facilitated the need for the research design employed in this thesis that looked to counterbalance this formal structure with the informal, the individualized, and socialized, as well to

chart coherency across modes. Ultimately, this balanced approach proved beneficial in charting a trajectory emerging from the nexus of multimembership and not exclusively within a disciplinary community.

9.12: What is the significance of those practices for the discipline?
The activity, practices, and artifacts presented in this thesis serve to structure graduate students' participation in their discipline. They are not all explicitly designed as such; several of these practices are appropriated from the informal, individualized or from informally socialized environments. These are shared, adapted, discarded, or subverted in the formal disciplinary space, depending on utility, predilection, or motivation. It is in this process of sharing and adapting informal practices to formal needs, that transformation and hybrid practices begin to emerge.

There is significant evidence of practice sharing across communities, particularly in the use of mobile technology emerging from informal space and applied to formal space. This practice sharing isn't free from tension; informal or individualized practices are often discarded to suit formal practice, subverted, or some such variation. When they are shared successfully or sit comfortably within the existing nexus of multimembership (again, returning to the relatively unencumbered porting of informal practice emerging from KakaoTalk into the formal space), "longer chains of remediation" (Fraiberg, 2010) emerge that provide increased capacity for disciplinary participation. These longer chains of remediation are artifacts of peripheral disciplinary participation in that the graduate students employing them are forced to evaluate and iterate on their use and applicability in the disciplinary community. Graduate students come to know which practices work and which practices don't in the formal context through

community feedback from faculty, seniors, or peers. They learn how these practices work coherently, or not, in a larger systems of practice. For some, this will spell disengagement (an outbound trajectory), for some a renewed or increased inbound trajectory. Some will be content to manage multiple trajectories simultaneously without gravitating towards one (liminal trajectory).

The role of seniors in validating practice sharing is profound. Many of these seniors will model disciplinary activity, including mobile technology use, for newcomers to the discipline. Faculty extend this validation through direct disciplinary feedback or through implicit structuring of the course (curriculum, learning activities, data collection). These validation filters (seniors and faculty) are socialized acts bounded within a humanities context in the first instance and through a South Korean sociocultural context in the broader instance. This thesis does not in any way attempt to downplay the difficulties experienced in navigating the tacit or contested dimensions of community practice; it suggests, however, that these difficulties are partially mitigated by the South Korean context, where the ambiguity of disciplinary community participation is at least partially abated through a sophisticated sociocultural environment.

Yet, there are instances when this sociocultural mitigation isn't sufficient or navigating the contours of community participation. Several students expressed disinterest in the more socialized aspects of disciplinary participation and the mobile technology uses that facilitated that socialization. Some participants reported frustration with socialized group activity, positioning themselves in limited opposition to South Korean sociocultural practices of interaction, and the disciplinary practices of collaborative learning. There were some graduate students who broached the larger negative effects of mobile technology use on socialization in general ("rude" to use mobile phone when talking with others),

positioning themselves and their learning practices in opposition to mobile technology use. This opposition was buttressed by some in their non-digital (preferred use of pen and paper) presentation, relying on mobile technology only when necessary. There was evidence of subversion in terms of defying faculty's bans on mobile technology use in the classroom, or in the accepted mobile technology use as proscribed by seniors. While this subversion represented a small portion of the overall data, it does suggest that these movements are problematic for using community of practice theory in deciphering this activity as "informal culture….is probably just as likely to result in the subversion of work purposes" (Gourlay, S., 1999). Yet, subversion still affords this research the ability to chart learning trajectories in relation to the disciplinary community by identifying activities consistent with an outbound one.

Despite these activities of subversion or opposition, the majority of the data presented evidence of adherence to, or an expressed desire to adhere to, the disciplinary practices of the community. There is evidence of these graduate students either appropriating the "shared repertoire of processes at work" in this community, or providing alternatives to these shared practices. For some, this adherence provides glimpses of a growing autonomy on the part of the graduate student in their capacity for navigating disciplinary participation, autonomy that suggests an approaching liminality, or even the passing of a threshold: the challenging elements of disciplinary learning leading to deeper territory of understanding and identification with the discipline (Meyer & Land, 2005, 2006). Threshold concepts were evident to some degree in the data through discussions of achieving a certain milestone (first paper presented at a conference, first project well received by faculty or peers, first media production of some sort), or an identity shift towards or away from the discipline.

A significant reservation in employing threshold concepts more overtly in this discussion is their positioning as sudden, concentrated acts (threshold implying the dichotomy of before and after). The data presented in this thesis suggests that this wasn't the case. These graduate students evolved their disciplinary participation through a series of acts and iterations gradually over a course of time. As such, thresholds were continuums of activity rather than discrete passages. These graduate students' negotiation through thresholds, however condensed or elongated, were the intersections where practices were negotiated and iterated upon, where mobile technology use and compositions were validated, and so forth. The data suggested that it was in these boundary negotiations, whether leading to the passing of thresholds or not, considerable evidence of a learning trajectory is presented.

Chapter 10: Conclusion

The research questions posed for this thesis were designed to provide an understanding of the specific South Korean context for learning with mobile technology, the role of mobile technology for learning in the humanities in South Korea, what type of mobile artifacts are being produced there, and what trajectory this combination of activity might suggest. The data collection and analysis answered the research questions, generated additional questions and points to consider in future research, and outlined a range of learning activity in the humanities in South Korean universities.

What follows is a synthesis of the findings emerging from this thesis, a synthesis that speaks to and expands on the research questions. This is followed by a discussion of the implications of these findings as related to the field of mobile learning, the movements of learning trajectories, their evidencing and structuring amidst multiple community memberships, their application to a disciplinary context, and their emergence from and effect on the South Korean sociocultural context for learning. This synthesis of findings and subsequent discussion of implications is followed by a discussion on the contributions of this thesis, and then subsequently by a section on the limitations of this study. This chapter concludes with a discussion of further research.

10.1: Synthesis of findings

It is important to note that the applicability of this study is to humanities practice in South Korean universities and how mobile technology use might inform learning. It does not extend beyond that South Korean context, except broadly and as related to the categories presented in this chapter. There is broader applicability to how research positions mobile learning and mobile technology use

in the university context, how media, learning, and other practices navigate between informal, formal, socialized, and individualized states of meaning-making, and what this means for charting learning or participatory trajectories in relation to the communities in which graduate students routinely participate. This is discussed in some detail in the following sections.

This thesis has presented findings emerging from the data that speak to several fields. To begin is the overall focus of this thesis on learning trajectories, how they are evidenced and structured through mobile technology, how they are positioned within a larger social topology, how their activities are governed by South Korean sociocultural practice and the practices consistent with participation at the nexus of multimembership. Ultimately, the use of learning trajectories proved satisfactory for analyzing the movements of these graduate students as they correlated to community participation. Yet, adaptations were deemed necessary to fully make visible the sophisticated sets of movements that suggested a trajectory and to establish the complexity of community participation, hence the inclusion of oscillating and liminal trajectories.

The research discussed in the previous chapter also suggests that community participation is constructed through the porting and adaptation of practices from informal to the formal, from the formal to the informal, from the individualized to the socialized, and so on. These practices are shared, adapted, discarded, subverted, and refined in a larger cycle of coming to know in relation to a particular community, evidencing a habitus of transformation.

An additional finding was related to the role of sociocultural practice itself on community participation, particularly disciplinary participation. There was evidence to suggest the role that this held on establishing a learning trajectory in

relation to a community, particularly as evidenced in the senior-junior relationship. There was evidence to suggest that many of the difficulties or ambiguities faced when navigating the contours of community participation, particularly in its more tacit aspects, were mitigated to some degree through this sociocultural layer of activity. There was evidence to indicate Yoon's (2006a, 2003) retraditionalization in mobile technology, or how sociocultural practices existing in face to face interactions are ported into and adapted in mobile environments. Many of the same practices involved in face-to-face interaction, particularly reciprocity and senior-junior relationships were found, hybridized to some degree, in mobile technology.

The role of mobile technology itself in both evidencing and structuring community participation proved to be a finding of note for this thesis. The definition put forth for mobile learning proved durable. There was evidence that satisfied all the particulars of this definition including learning that occurs across multiple interactional contexts (Dourish, 2004), amongst people and interactive technologies (Sharples, Taylor, & Vavoula, 2007). There was learning that encapsulates public and private processes (2007) and activity that moves between individualized and socialized states of activity with movements across informal and formal contexts (Park, 2011). There was evidence of transformation in both material and cognitive activity. There was mobile technology allowing for and possibly accelerating the management of multimemberships, which in turn clarified the nexus of multimembership from which many of these graduate students operate, many with little apparent centering towards a particular community (liminal trajectory). Mobilities were manifest throughout the research.

10.2: Implications of these findings

These findings have implications for several fields, both central and ancillary to this thesis. This section begins with the implications for mobile learning, before moving to learning trajectories and their evidencing, the nexus of multimembership, disciplinary participation, and the interactional context of South Korea itself.

10.2.1: Mobile Learning: From determinism to cognitive transformation

The range of activity presented in this thesis identifies movement by these participants through the four states of mobile activity (Park, 2011), namely formal, informal, individualized, and socialized. Yet there is considerable overlap in the nature of this activity and these categorizations; participating in one is not a mutually exclusive event. These graduate students moved relatively unencumbered through these categories and were able to articulate, without generally being prompted to do so, when a particular informal practice was adapted to a formal activity, or when a socialized practice was brought into an individualized space, and so on. The "semipermeable membrane" (Potter, 2012, p.6) between informal and formal learning presented itself via mobile technology as relatively porous, offering a greater range of movement through these spaces than was originally anticipated.

However, occasionally there indeed were obstacles to that movement. There was evidence of friction in terms of adapting informal practices developed through mobile technology into formal practices (professor banning mobile technology; particular group preference for an application or functionality at odds with informal or individualized use, etc.). In these moments where the participant

expressed their preference for a particular practice and their frustration with needing to adapt that practice to formal or socialized use, there was a general deference to seniors or faculty in navigating that adaptation. The participant would adapt their existing mobile practices to the group or the faculty's preferences, suggesting that South Korean cultural practices are being repurposed, or retraditionalized, as "new technology is in fact perceived and consumed through local filters including social relations and norms" (Yoon, 2006a).

Particularly in formal activity, there was great evidence of mobile technology use being filtered through cultural practices as seniors or faculty outlined the activity, the assessable outputs or deliverables, the workflows or learning processes, and, in some cases, went so far as to dictate which mobile applications were to be used. The implications of this finding for mobile learning are significant, as it suggests the need for identifying and analyzing mobile learning through a sociocultural lens, along with the complementary lens of field, activity, and community. Beyond merely structuring the activity taking place in mobile learning, the retraditionalization of communication in the mobile environment in South Korea governs much of what was presented in this thesis: reciprocity, connectivity, conformity, and subversion all structuring, at times, a disciplinary engagement.

There was also considerable evidence to suggest the primacy of and predilection for informal, individualized, or socialized practices over formal practices when mediated through mobile technology. The participants provided accounts that described their adaptation of informal to formal practice, but there was meager evidence to suggest that formal practices were repurposed in the informal space. For example, many of the participants were willing to adapt their informal socialized practices (chatting through KakaoTalk with friends, for example) to a formal socialized practices (chatting with group members towards formal activity

in a different application, for example). The only evidence to suggest that formal practices were directly informing social ones was in terms of media creation and data collection. Some of the participants developed technical skills in developing particular forms of media in their discipline that they then used in their own informal learning projects. Some participants developed means of systematic data collection for field work that were then adapted to informal data collection (for use potentially in orientation and navigation informal practices). Mihyeon, in the vignettes, most readily projected this and even then it is unclear as to whether it was the formal practice being shared with the informal or the inverse.

However, the vast majority of data on mobile technology use pointed to formal practices being the partial adaptation of informal mobile and learning practices. Pragmatically, this is logical as informal mobile technology use has enjoyed a much longer maturation process in these graduate resulting in particular learning, media, and communication practices. In comparison, these graduate students are still peripheral participants in the disciplinary sense and therefore presumably more willing to adapt formal practices as suggested by seniors or faculty, bestowing legitimacy on their mobile technology use. It is, however, a critical position for mobile learning and one that deserves further study. If the flow of activity suggests that informal mobile learning precedes and, in part, constructs formal mobile learning and disciplinary engagement, then this presents a number of research, methodological, and design challenges that must be addressed.

It also suggests that this mixture of mobile technology use for learning, South Korean sociocultural practices, and humanities practice presents a dynamic interactional context for these graduate students, a context being constantly assembled and reassembled as needed, or sequences of practices that reveal that "learning occurs in and subsequently produces context in a fluid cycle" (Sharples

et al, 2007). This fluidity was apparent in much of the data; when fluidity was restricted, adaptations are created to establish flow between these areas of activity. It was not unlike the 'circuit of culture' described by Ok (2011) in reference to media practices in South Korea: mobile technology is "firmly embedded in what it means to experience place, co-present or not." The space referred to by Ok (2011) relates to geographical space where mobile technology assists in creating space that is "both a geo-imaginary and sociocultural precept." This hybrid form of space was present in the research; these graduate students were developing learning spaces that were generated, existing in both geographical and virtual form. They were informed by sociocultural practices as described in this thesis. The circuit of culture runs through informal, formal, socialized, and individualized spaces through mobile technology; the movement is fueled by practice, whether sociocultural, disciplinary, media, or so on. The social topology being presented is a complex and dynamic construct.

More importantly, positioning mobile learning as an environment in which these activities and practices take place is an evolution in its development. To view mobile learning specifically through the technological lens of activity negates the sociocultural, disciplinary, informal, media and other practices in which mobile learning flows. It also assumes a stable contextual environment in which mobile technology is introduced and accepted (Pachler, Seipold & Bachmair, 2012, p.8) rather than negotiated, a top-down approach that fails to account for repeated movements between formal, informal, socialized, and individualized spaces. To return to the definition of mobile learning adopted in this thesis, the findings suggest that "learning occurs across multiple contexts, amongst people and interactive technologies" (Sharples, Taylor, & Vavoula, 2007).

The findings in this study suggest that a slight adaptation to this position is needed; learning occurs through multiple contexts and learning occurs amongst people and themselves. *Through* is substituted for *across* in this position to negate the dichotomy of these different spaces (formal, informal, socialized, and individualized) and to suggest their interconnectedness. Movement is not across borders but rather through overlapping spaces. *Themselves* is added to people as several of the findings pointed to the importance of individualized practices in the learning process.

Learning occurs in these practices and activities as a result of the context established; the learning itself then proceeds to produce a further context. For an individual example, Jisoo took pictures to orient herself to unfamiliar surroundings. The orientation created a context of familiarity. She then used this orientation to participate in formal and socialized disciplinary activities at intervals, which suggests a greater familiarity with disciplinary and/or socialized practice, or an expanded context for participation. Context forms and informs learning in streams of activity through mobile technology. This process has implications for many past and current positions of mobile learning as a temporally and geographically specific learning engagements. It moves beyond the anytime/anywhere positions of earlier mobile learning definitions, into a more sophisticated confluence of activity, practice, and artifact. It suggests that mobile learning is a persistent act of context creation that allows for the possibility of community engagements, disciplinary included.

These findings also suggest that the positioning of mobile learning as a transformation of habitus (Kress & Pachler, 2007) is instructive yet incomplete. Habitus, adapted by Kress & Pachler (2007) from Bourdieu (1977), refers to the "the life world of the individual framed both as challenge and as an environment

and a potential resource for learning" (2007). Within this transformation of space to learning space, "that which is mobile is not knowledge or information, but the learner's habitus" (2007). Mobile learning as a learning state of constant expectation, contingency, transformation and approaching completion is useful when paired with the related trajectories of these learning explorations. These trajectories are positioned within a community or set of communities that the learner is approaching, running parallel to, or pulling away from; as such they are exhibiting force on the learner and are, to some degree, responsible for these repeated movements between informal, formal, individualized, or socialized states of activity. These repeated movements are enacted through a constant expectation of a relationship with these communities, whether this relationship is to be augmented, diminished, or simply maintained. All require activity to sustain a relationship; as such, the learner is in a constant expectation of activity. Their relationships with these multimemberships depend on and demand it.

None of the students articulated, aside from obtaining employment or meeting the requirements for graduation, a threshold that once reached suggests a permanent or complete membership in the community. Therefore, to fully understand mobile learning as a transformation of habitus, we need to position that transformed habitus within a social topology amidst a set of communities, all exhibiting pull on the learner. Habitus is transformed based on the expectations of activity for communities simultaneously; it isn't linear or two dimensional. By attempting to understand these multi-dimensional movements, transformations, and evolving memberships can the research community begin to fully appreciate the "mobility turn" (Urry, 2000, 2002) in the social sciences, in which the mobile phone has become a lens for debates around place and contemporary forms of society (Ok, 2011). There is indeed a "mobility turn" present in this South Korean context and it is, like most mobilities, multi-dimensional.

Mobile technology is the technology most readily available in these graduate students, where many of these learning activities are enacted and community memberships are evolved. It is where the transformation of habitus is at least partially mediated and where memory of this transformation is stored. Chat records, emails, notes, images all acting as memory, or as a database of artifacts representing participation across a range of communities. As researchers, we are defining the index by which we postulate that memory: as the history of social practices particular to a community (Wenger, 1998, p. 47), as a chart of emerging identity amidst multimemberships that "expands the focus beyond communities of practice, calling attention to broader processes of identification and social structures" (p. 145), as a record of habitus transformation, a document of the contours of the social topology, or as mobility itself. It clearly depends on our analytical frame, but mobile technology provides a means of evidencing many of these postulations.

Positioning mobile technology so prominently is problematic, particularly in those students who articulated a subversion to its use and a displeasure for its effect on sociocultural practices. However, it is through this technology that we are able to chart trajectories in relation to communities across a range of informal, formal, socialized, or individualized spaces, or as presented by Sharples (2007) "the private and public processes of coming to know through exploration and conversation across multiple contexts, amongst people and interactive technologies." Mobile technology is not a mere prop, or a surrogate for some other social practice. It is an object of "intentional state entailment" (Bruner, 1991), a tool designed to manufacture a desired outcome, which as presented in the findings is the management of relationships across a range of communities.

10.2.2: Sophisticating learning trajectories: Persistent liminality and oscillation

The implications of these findings for learning trajectories themselves are significant. To begin, the data suggested additional movements that did not overtly correspond to inbound, outbound, or boundary trajectories, namely the oscillating and liminal trajectories discussed in previous chapters.

With oscillating trajectories, a secondary trajectory existing within a larger one, there is some evidence of the "competing demands of the various communities with which they identify, even if they are competing" (Oliver & Carr, 2009) manifested as movements subverting, but not redirecting, an overall trajectory. For example, a student on an otherwise inbound trajectory subverts or rejects a particular socialized and formal practice; the subversion doesn't negate the inbound trajectory. Yet it remains significant in that it details an instance in which the contours of community participation are not so easily navigated, an instance where the semipermeable membrane between community and peripheral participation is a bit less permeable. This has implications for how learning trajectories might function as analytical agents. They begin to identify instances in which the learning practices of the individual are not so easily aligned with those of the community. It is in these misalignments that there might be fracture points within a larger trajectory. It is also where learning trajectories are positioned less as monolithic movements and more as sophisticated aggregations of activity, intent, and context.

With liminal trajectories, there is an adaptation of boundary trajectories that has implications for how learning trajectories are positioned in the research. Boundary trajectories, "involving participation in more than one community, which may lead to links being established or practices shared" (Oliver & Carr, 2009), were present

throughout this analysis. There is evidence of practice sharing, particularly from the informal to the formal, that suggested these boundary trajectories. Yet, liminal trajectories are advanced here precisely because the data suggested that a persistent liminality was, for many, the default position. The management of this activity in the nexus of multimembership required considerable effort, yet the tension this effort might have otherwise generated was mitigated for some as a result of South Korean sociocultural context. In short, liminality featured prominently, but not always problematically, in the data. Liminal trajectories have implications for learning trajectories overall as they problematize the inevitable, implicit pull of one community over another when positioned amidst community of practice theory. Many of these graduate students were perfectly willing to manage multimemberships without centering towards one. Many made no explicit overtures towards a professional or disciplinary community, yet maintained and even augmented relationships with both; for many, community identity amidst this activity was governed more through informal or socialized communities rather than professional or disciplinary ones. Again, there is the importance, almost supremacy, of the South Korean sociocultural laminate at least partially governing this activity.

However paradoxical, these liminal trajectories can be seen as the movements of no-movement, a trajectory of maintenance that is exerted at least partly due to temporal considerations. These graduate students are not in a position to fully enact an inbound trajectory towards one community precisely due to their status. Those with a particular affinity for one thwarted by temporal or spatial immobility (the graduate study had yet to formally complete, negating a centering) towards another. As such, the implications emerging from this suggest the importance of time in structuring these trajectories and the need for a longitudinal study to support these findings.

10.2.3: Cartographies of the Mobile: Tracking the Trajectory

Yet the implications emerging from these additional trajectories are instructive insofar as they suggest a sophisticated relationship of the individual with their communities. What this implication requires is a sophisticated method for making these relationships visible. This thesis has advanced one such method, but by no means an exclusive one. This method involved employing coherence across a range of data, to view the data as "intentional state entailment" (Bruner, 1991) where what was done was meant to be done, and to bookend the research design with narrative methods (interviews and reflective prompts). These methods provided the 'points' or instances of discrete material (artifacts and activity) that can then be charted amidst the individual's social topology.

Then this data was viewed through a series of laminates: the movement between formal, informal, socialized, and individualized activity; engagement with boundary objects (media, practices, etc.); and the structuring of this activity through mobile technology. As such, we begin to track a learning trajectory when the data points and the laminates structuring their visibility suggest a relationship with community participation (whether inbound or otherwise). The methodological implications of this approach are considerable. If learning trajectories are positioned as sophisticated aggregations of artifacts and activity being structured by laminates of practices, movements, and contexts; rather than monolithic movements drawn from singular data points or methods (ethnography, interviews, etc.); then a corresponding need appears to 'sophisticate' the methods used to make these trajectories visible. We as researchers must follow intent and activity across a range of practices and modes and chart coherence or incoherence as it appears.

The use of laminates presents conceptual implications as well. These methods reveal how interdependent these laminates are. Which laminate is structuring or changing which? The answer is ultimately that they all do. Mobile technology structures learning practices and therefore structures community participation. Mobile technology is governed by, at least partly, South Korean sociocultural, disciplinary and professional modes of communication. Practices, artifacts, and technologies evolve or are discarded as a result of this activity. Participation and identities are redefined constantly. A complex interactional context is constructed amidst the cycle of activity. So, whatever trajectory is being evidenced is ultimately a shifting one, one that spans the social topology of the student. These shifts foreground the importance of the aforementioned social topology, a space that acknowledges the shifts, permutations, and deformations emerging from this interactional context. All of this has implications for disciplinary participation, as discussed in the following section.

10.2.4: It's Complicated: Disciplinary Participation in the Humanities

If mobile technology acts as a tool to manage relationships across a range of communities, and if the learning artifacts and practices indicate movement through these communities, what does the application of community of practice theory suggest in the disciplinary context? Learning trajectories prove more useful than community of practice theory in regards this research, a belief that has implications for community of practice theory overall.

The key to this understanding is the nature of the movement suggested by the practices and artifacts generated through participation in these communities. As discussed, trajectory when presented as movement through a set of overlapping communities isn't a mutually exclusive direction; a movement in this context could present both an inbound and a boundary trajectory simultaneously. For

example, activity that suggests an inbound trajectory for the media studies participants on the professional track might simultaneously suggest a boundary trajectory for the academic track. Participants presenting an inbound trajectory towards an informal social community might be presenting a boundary trajectory towards a disciplinary community with the same activity. Some exhibited contradictory movements within an overall trajectory (oscillating) or a persistent liminality towards many communities simultaneously. Therefore, it is important to position these trajectories as not being mutually exclusive. Movements will present inbound, boundary, and even outbound trajectories depending on the context of the activity being observed.

One limitation of the community of practice approach is its emphasis, even elevation, of formal (disciplinary or professional) communities at the expense of the social or tacit dimensions of learning (Duguid, 2005). Community of practice theory emphasizes the "shared repertoire of practices", the mutually negotiated boundaries (suggesting their discrete impermeability), and the discourses of "common language that allows for discussion and negotiation across boundaries" (Wenger, 2000). While there was evidence to suggest that these graduate students were becoming acquainted with these boundary objects and community practices often through the conduits of senior or faculty relationships, the evidence also positioned these boundary negotiations as extensions of practices derived from informal, social, or even individualized practices. This emphasis on the informal as forebear of the formal complicates the emphasis in community of practice on formal boundaries, shared processes and discourses. While this does nothing to address the complications of peripheral participation in academic communities (tacit, plural, contested practices; gatekeeping, etc.), it does point from where these complications might be emerging.

It is the position that many of these informal communities are not communities of practice at all, at least not as defined through shared practice and domain. This was evident in many of the informal communities in which these graduate students participated in, ones that informed their disciplinary participation. This point is reiterated by Barton & Hamilton in the following passage:

> "...we encounter fields of social action that are not characterized by a stable or well-bounded shared purpose; they have diffuse and unclear membership without clear rights or direct channels of communication for negotiated meaning; there is often ambivalent engagement... and incomplete repertoires of shared resources that leave many assumptions unarticulated... Viewed like this, the social world is a long way for the prototypical community of practice" (2005, p.25).

This complements many of the findings from this research project; in particular, many of the informal, social communities that these graduate students participated in did not always share a stable or well-bounded purpose and some evidence was found to suggest that engagements with these informal, social communities were ambivalent or inconsistent. Yet, and contrary to what Barton & Hamilton suggest here, many of these informal, social communities were clearly delineated, clearly marked in terms of memberships and channels of communication for negotiated meaning, and possessed with a set of shared repertoires and resources to negotiate meaning.

This places a greater emphasis on the specific South Korean context and its influence on the development of and participation in social communities. The South Korean context places greater emphasis on social relationships than might be found in their Western counterparts; the expectation of multiple, simultaneous

community memberships is tacitly navigated by these graduate students. Informal relationships remain tacit and "unarticulated", yet they are highly structured, hierarchical, and clear. As such, while these movements between informal and formal communities might prove challenging in terms of negotiating participation, South Korean graduate students use their social communities and their attendant sociocultural practices to navigate these uncertainties, as discussed in relation to seniors and faculty in previous chapters.

To say that these informal, social communities are not communities of practice is indeed true; they lack many of the defining characteristics such as an emphasis on participant as practitioner, for example. However, to say that because they are not communities of practice means that they cannot directly generate participation in a community of practice is erroneous. The practices that these graduate students employ in their informal and social communities, as well as practices developed through individualized activity, are the foundation from which their disciplinary participation originates. It is the foundation from which they engage in their peripheral participation, and, as such, it cannot be severed from the formal modes of disciplinary participation.

community of practice proves useful in the South Korean context more in charting movement through communities (trajectories) than as a means of identifying an ambivalent or certain relationship with a particular community. For the disciplinary focus of this research project, it provides a means of employing the artifacts and practices developed by these graduate students and charting the trajectory they suggest in relation to the disciplinary community. Yet challenges remain. This approach remains problematic in the context of higher education in terms of the positioning of students as "permanent novices" who never achieve full membership (Lea, 2005), or through academic practices which are "plural,

contested, unstable, and largely tacit" (Gourlay, 2009). These points are indeed true in the South Korean academic context as observed through this research, even if mitigated to some degree by sociocultural practice.

Yet I posit that this can be positioned as a generative principle. If community of practice extends its scope towards the informal, social communities where many of the everyday practices (Lankshear & Knobel, 2011) of participation are born and are eventually applied, in hybrid form, in formal disciplinary communities, then this instability is the extension of peripheral participation. It is the diversity of informal practice meeting the formality of disciplinary process, from which both community and individual practice are evolved, or where the graduate student finds communities more receptive to their practices. It is instructive in terms of identifying the root of the instability of academic practice as well as the broader environment of learning activity and, once identified and understood, making use of it pedagogically or analytically.

10.2.5: Hyper-connectivity and reciprocity: South Korea as interactional context

The South Korean context in which this activity occurs is critical to understanding the observable phenomena employed in this thesis. Previous discussions in this thesis documented some of these contextual permutations: the 'retraditionalized' mobile technology use (Yoon, 2006a), the development of social capital through the use of mobile technology to manage social relationships (Kim, 2002), and the critical importance of seniors and peer relationship in modeling and iterating on individualized practices. The South Korean context also places seemingly greater emphasis on informal social networks, tight-knit and often smaller than their Western counterparts (Kim, Sohn, & Choi, 2011). The contours of socialized practice are culturally specific.

This South Korean context predicated the need for this methodology. It would be impossible to understand disciplinary participation through mobile technology without first extending the field of observation to where that disciplinary participation is first negotiated. As stated in the previous chapter, some of this mobile activity isn't strictly designed for disciplinary learning or engagement; it is designed to maintain and nurture peer relationships. That this informal, social activity sits outside a delineated community of practice should not lead us to believe that it is divorced from disciplinary participation; disciplinary participation emerges from these informal, social fields of activity in instances where the prime motivation for the activity itself was the nurturing of peer relationships.

The focus of this thesis on the South Korean university context in the humanities was explicit. It was an attempt to reveal the particular contextual characteristics that influence mobile technology use, learning practices, and overall learning trajectories being evidenced therein. It was an attempt to demonstrate that this South Korean context generates particular manifestations of activity that need to be understood within the context itself. The South Korean conceptualization of the humanities, a unique context of activity, hybridized practice, and indigenous sociocultural practice, challenges the humanities as presented in higher education in the Western tradition. This context demands and deserves to be understood in its own right, as meaning is made through a particular application of tools and practices through a particular community governed through particular sociocultural practices. The implication for foregrounding so prominently this activity in the South Korean context are manifest; it is an implicit call for mobile learning in higher education to be grounded in sociocultural practice.

10.3: Thesis Contributions

The contributions of this thesis span from mobile learning to the theoretical (particularly Wenger's learning trajectories and, to a lesser extent, community of practice theory) and to the methodological. While there are pedagogical applications of this research to be considered as well, these are not actively discussed in this thesis.

10.3.1: Adapting Wenger's Trajectories for mobile

This thesis is designed to contribute to a greater understanding of the context in which South Korean graduate students in the humanities make meaning through the use of tools, across learning practices, modes and different forms of media, through sociocultural filters (Yoon, 2006a), and between informal, formal, social, and individualized states of activity (Park, 2011). It was specifically designed to present the South Korean context for learning as well as the context in which mobile technology use is being enacted. As such, this thesis contributes to further studies that might wish to establish a more detailed observation of technology use in formal learning as well as those who wish to design learning that takes advantage of this particular South Korean context.

Further, this thesis is designed to contribute to the development of community of practice (Lave & Wenger, 1991) as a means for understanding learning activity and community memberships. The critiques of community of practice theory ("plural, contested, unstable, and largely tacit" of Gourlay, 2009; permanent novices" who never achieve full membership" of Lea, 2005 & the ambiguity of social communities of Barton & Hamilton, 2005) are confirmed, to some degree, in this thesis. This thesis identified these ambiguous informal, social communities, informed as they are by individualized and informal sociocultural practices.

However, rather than present this ambiguity as a deficit, this thesis extends the parameters of community of practice theory to include informal, individualized, and socialized activity. This activity is positioned as occurring within an international context of great sophistication in terms of practices and technology use; they are positioned as the progenitors of many of the practices used to participate in the disciplinary community. By extending the scope of community of practice theory to include these informal, individualized, and socialized activity, this thesis presents a continuum of activity across informal and formal, social and individualized spaces. Observed within only the frame of a disciplinary community, learning activity is indeed "unstable"; when viewed as one set of activity along a particular continuum of learning amidst a social topology, this instability can be seen as an emergence, an opening from which disciplinary engagements are crafted.

The limitations of community of practice, not including those presented above, are often due to the rigidity in which it is defined. The shared repertoire of processes, shared domains, shared identity of member as practitioner, all of these contribute to the inevitable ambiguity or contradiction. There is often substantial overlap in participants' observation of who belongs (Wenger, 1998, p.119), substantial ambiguity of knowing how and when to contribute to them, and confusion in the ability to assess the appropriateness of activities and artifacts. However, these limitations are mitigated in this thesis through contextualizing agents. Socially, these graduate students navigate this ambiguity and confusion through a reliance on faculty and senior relationships. Culturally, these graduate students retraditionalize their mobile technology use (Yoon, 2006a) towards learning effect. Individually, these students develop practices to acclimate, orient, and transform space into learning space (the habitus transformation of Kress & Pachler, 2007). As such, the confusion and ambiguity of community membership and activity is

mitigated through layers of interactional context. This thesis contributes to the address of these limitations through a greater emphasis on the effect of informal, individualized, and socialized activities on formal disciplinary participation. It does so through a greater emphasis on learning trajectories, or movements towards, away from, and by these communities. This thesis also contributes by suggesting that these movements are not mutually exclusive and can occur simultaneously. All of this assists in freeing community of practice theory from the limitations of its oft rigid application.

In this thesis, mobile technology use, the learning practices that accompany this use, and the mobile artifacts created from these practices have been posited as artifacts to be observed and charted towards identifying learning trajectories. These artifacts have been used to triangulate these graduate students not as fixed points in a learning environment, but as trajectories of motion, a movement towards, by, and away from a particular disciplinary community. This triangulation made possible only through extending the observable field of activity: from informal to formal, and from socialized to individualized. Without this extended field of observation, charting trajectory becomes problematic. It is my belief that this is a significant contribution of this thesis; it provides a methodological approach for understanding mobile learning in a disciplinary context by understanding the overlapping communities of activity surrounding it. It is a methodological approach born from a theoretical positioning of learning as a series of movements through fields of activity, ones that extend far beyond the disciplinary community. As such, it offers a framework for understanding the organic movements evidenced by mobile technology in higher education.

10.3.2: Mobile learning contributions

This sophisticated movement through communities further supports the definition of mobile learning employed in this research, a further contribution of this thesis. Mobile learning is redefined as a transformation of habitus, or a transformation of the individual's capacity to make use of their environment, or the act of changing space into learning space. This definition of mobile learning with its emphasis on transformation, or movement, and the use of learning trajectories to chart this movement emphasizes the mobility in mobile learning. Learning, as presented in this thesis, is not a fixed point, but rather a trajectory or a continuum of learning activity. This definition of mobile learning and its coupling with Wenger's learning trajectories (1998) contributes to the under-theorized field of mobile learning, which routinely emphasizes the technology used over the practices involved in. It also contributes to the idea of place itself, the places of habitus where learning transformation occurs. This is made evident in the following passage:

> …'real' places are not necessarily fixed and can be mobile…places are dynamic, 'places of movement'…They are not fixed within one location…Places move within networks of human and non-human agents…Such hybrid systems that contingently produce distinct places need examination through methods that plot, document, monitor and juxtapose places on the go or places that are no longer on the go (Büscher et al., 2010).

This passage suggests the need for mobile methods to match this emphasis in mobile learning on hybrid places of mobility, but it implicitly demonstrates that place itself is being produced, or transformed persistently through activity. It suggests that the use of social topologies will resonate in the spaces of mobile learners. Place, the interactional context, is being constantly created, transformed,

discarded, and iterated upon. It suggests that engagements with formal learning are assemblages of 'nearness' (Ross et al, 2013), a proximity between the learner and the community, university, or department in which this activity is taking place. This "cartography of the mobile" (Hjorth, 2009d), or perpetually negotiated and reiterated interactional contexts of learning, are under theorized aspects of mobile learning. The contribution of this thesis is to reiterate the necessity of developing mobile methods that makes these spaces visible.

10.3.3: Methodological contributions

The methods employed in this thesis mitigate several of the difficulties involved in mobile research by emphasizing the capacity of the participant to craft their own narrative of learning and participation. This thesis looked to build upon the ethnographic and qualitative methods employed by Yoon (2006b) and Hjorth and broaden them to include data across a range of modes (text, audio, video, and imagery), fields of activity (informal, formal, socialized, individualized), and discrete phases, in a context of relevance to the South Korean environment. As such, the methodological contribution of this thesis is in presenting a robust model for analyzing mobile learning across the spectrum of activity within a sociocultural context. This research design was engineered to identify how these graduate students engage in their discipline by identifying the communities, activities, and artifacts that preclude that participation. A methodological emphasis on coherence across the modes and phases of data contributed to corroborating findings emerging from the interviews. An emphasis on narrative integrity or intentional state entailment provided consistency to this design across the data, while breaking the data collection into two discrete phases with a brief analysis conducted to ascertain emerging findings provided the rigor necessary to triangulate findings emerging from the first phase of activity.

10.3.4: Broadening South Korean research practice

A contribution of this thesis is to further expand South Korean research practice away from its preponderance on quantitative methods for mobile learning. Qualitative methods, while growing in favor and use, remain of secondary importance in much of the research literature in the South Korean context. Further, a contribution of this thesis is this avoidance of technologically-deterministic models of mobile learning that emphasize technological acceptance as a precursor to the success of top-down, government-initiated models of technology enhanced learning. This thesis expands on the work of Hjorth and Yoon in advancing the richness of and reliance on South Korean informal and socialized learning communities. This thesis posits the capacity of the informal for informing the formal through practice sharing, adaptation, and subversion. As such, a contribution of this thesis is in its capacity for informing emergent learning design, design that attempts to make use of the practices of these informal and socialized communities. These graduate students participate in their disciplinary community to generate meaning "in relation with other tangential and overlapping communities" (Lave & Wenger, 1991, p.98). These can include resiliency-building Korean social networks (Kim, Sohn, & Choi, 2011), informal study or peer groups, or other offline or online communities of activity. It is my belief that this thesis presented, at least partially, how these informal communities are employed to inform participation in formal communities.

10.4: Limitations of Study

There are several limitations of this research that mitigate the applicability or generalizability of these findings across a broader demographic.

10.4.1: Practical Limitations

To begin, practical limitations included the focus on the context itself: South Korean graduate students in the humanities, all representing universities exclusively in Seoul. As such, the findings represented here are limited to South Korean humanities exclusively. As the universities being represented in this study are considered prestigious, a limitation of this study is its applicability even in the South Korean context. There is the possibility that these findings would be different in less prestigious universities or in rural contexts, for example. There were practical limitations involved in the inability to disentangle extenuating factors in the sample size that might have affected participation (gender, class, and existing bias).

There were practical limitations in terms of sample size and selection. With eight graduate students participating in the pilot study and 25 participating in the main study, the generalizability of these findings is limited. Having greater access to other universities across the spectrum of South Korean higher education would have provided the opportunity to present a broader discussion of learning trajectories via mobile technology in the humanities. There were ethical limitations as well, discussed earlier in this thesis, in my role as Assistant Professor in a South Korean university, which excluded me from engaging in more direct, ethnographic forms of data collection and participant interaction.

10.4.2: Analytical Limitations

Using multimodality as a transcriptive rather than analytical method both enhanced and restricted this research. To begin, there were gaps in the research related specifically to ambient audio. These gaps were overcome through a

reliance on research (particularly Fluegge, 2011) outside multimodality to complement the existing research, but ultimately this proved to be an aggregated solution. Further gaps revolved around consistent transcription across discrete modes of data, rather than ensembles of multimodal elements. Coherence as an analytical tool was experimental and, while ultimately proving generative, imposed its own limitations.

There were limitations involved in the learning trajectories themselves as they privilege deliberate movement, or movement in and of itself. Learning trajectories ultimately privilege the centrality of the community, or multimemberships, in the movements of the learner in relation to them, which was at least partly challenged with liminal trajectories. Critiquing the antecedent to learning trajectories, community of practice theory, there are several limitations in its use as well. Community of practice theory, despite overtures towards landscapes of practice (Wenger-Trayner, E. & Wenger-Trayner, B., 2014) as broader fields of activity, foregrounds the individual community at the expense of the social topology of the student. This ultimately proved detrimental in its applicability to this research as many of these graduate students presented movements that adhered more to the social as opposed to the disciplinary or professional. Ultimately, it was revealed that community of practice theory does not account for the larger system of activity exhibited and transversed by these graduate students towards meaning making. The emphasis on social topologies in the accounts of these graduate students, a larger space including both informal and formal spaces, socialized and individualized spaces and these hybrid places of mobility suggests a need for a theoretical counterweight or addendum to community of practice theory.

Employing narrative as analytical tool imposed its own set of limitations, some of which were overcome through an iterated research design. Hermeneutic composability, the idea that narratives are that which can be interpreted in terms of their role as a selected series of events that constitute a "story" (Bruner, 1991) suggest, implicitly, a response or narrative bias. That these graduate students, knowing that they were participating in a research study on mobile learning in higher education, would provide crafted narratives that presented their participation in higher education in the most positive light. This was mitigated through two adaptations to the research design after the pilot study. The first was greater emphasis on the reflective prompts as a means of testing the authenticity of the narrative being presented through the interviews and mobile artifacts (Phase 1); for some, counterfactuals were employed as prompts to challenge the narrative being presented. The second practical adjustment was the removal of myself as researcher from the data collection in deference to my translator. This approach produced narrative interviews of greater length and participant control. These adjustments mitigated many of these analytical limitations.

10.5: Further Research

This thesis generated many findings that would benefit from further research. To begin, further research is needed to explore in greater depth the learning spaces emerging from the research itself, namely the social topologies as discussed throughout this thesis. There is a suggestion in the data that these social topologies, carefully managed as they are to maintain the nexus of multimembership, are of greater significance to participation in higher education than the current research in South Korean higher education might suggest. Further research exploring these social topologies and how they inform participation across the university spectrum (regardless of discipline) would prove a useful expansion of this research.

One of the inherent limitations of this study was time, a factor that proved compelling in analyzing the learning trajectories being evidenced. For example, the liminal trajectories being evidenced by some might suggest that these graduate students do not have the autonomy needed to enact a learning trajectory towards a particular community of practice. They might be nearing completion of the graduate programme so have yet to be provided with the criteria (employment, further doctoral study, etc.) to commit to the professional or disciplinary community, if either. As such, a longitudinal study tracking these same graduate students over the course of their entire graduate programme might prove instructive in identifying a learning trajectory.

Further research is needed to unpack and identify the salient details of each of the 'laminates' structuring this activity: mobile technology use; informal, formal, socialized, and individualized activity, etc. In particular, the South Korean sociocultural structuring of the learning engagements of these graduate students needs to be investigated in greater detail to fully ascertain the applicability of these findings outside the South Korean context. Implicit in this position is the assertion that each culture will, in essence, produce an idiosyncratic presentation of mobile technology use with greater or less degrees of generalizability. Further research is needed to explore these socioculturally specific constructions of mobile learning. In the South Korean context, further to this is the need for research that explores the potential tension that exists between the top-down government-directed technology enhanced learning initiatives with these informal, socialized multimemberships most prevalent in this study.

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Appendix

Preliminary Information

This section contains information such as consent forms, interview schedules, and project information that was made available to the participants ahead of their participation in this study.

Online Information

The actual pages provided for the study, along with the Korean text, can be found here on the author's website. Please note that these pages were never indexed in the site menu; as such, navigation to them required the original URL posted to the university websites.

- #1: Narrative Interviews & Consent Form
- #2: Mobile Artifacts
- #3: Reflective Prompts
- #4: Appendix (please note that additional thematic tables can be found here)

Interview Schedule (Korean)

인터뷰 일정

안녕하세요.

저는 _____이며, 마이클 션 갤러거(런던대학교 교육연구소 박사 과정)를 대신하여 본 인터뷰를 수행하고 번역합니다. 질문이 있으시면 언제든지 gallagher.michaelsean@gmail.com 또는 http://michaelseangallagher.org 로 연락주십시오. 갤러거씨는 현재 런던대 교육연구소의 존 포터 박사와 니알 윈터스 박사의 지도 하에 연구를 수행 중입니다.

본 연구는 인문학 전공 대학원생들이 학업을 목적으로 이용하는 모바일 기술 활용도를 알아보는 설문 조사입니다. 본 연구의 목적은 대학원생이 모바일 기술을 사용하는 방식, 이를 통해 게시물을 만들고 커뮤니케이션하는 방식, 그리고 이러한 방식과 인문학 학업과의 관계를 파악하는 것입니다.

귀하의 답변은 연구 목적으로만 사용되며 익명성이 100% 보장됩니다. 본 연구에 참여했음을 알리기 위해 실명을 밝히기를 원하시면 저희에게 알려주십시오. 달리 말씀 없으시면 익명으로 처리합니다.

귀하의 허락 하에 본 인터뷰를 녹음하고자 합니다. 귀하의 녹음본은 제 연구 목적으로만 사용될 것입니다. 녹음해도 되겠습니까?

답변 가능한 항목에 대해서만 대답해주십시오. 귀하가 모바일 기술을 학업에 사용하는 방식을 이해하기 위한 목적이므로 정답이나 오답은 없습니다. 단지, 귀하의 경험을 자세히 듣고자 합니다.

본격적으로 인터뷰를 시작하기 전에 질문 있으십니까?

일반

1. 성함을 말씀해주십시오.
2. 전공이 무엇인가요?
3. 몇 학년인가요?
4. 연구 주제 또는 관심 분야는 무엇인가요?
5. 학위를 취득한 후에 하고자 하시는 일은 무엇인가요?

전공 관련

1. 학업 방식에 대해 말씀해주십시오.
2. 전공에서 요구되는 사항을 말씀해주십시오.
3. 어떤 것을 제출해야 하나요?
4. 리포트를 작성할 때 어떤 방법을 사용하시나요?
5. 과제 시 글(text) 외의 다른 형태의 게시물은 어떻게 활용하나요?

소셜 및 협업

1. 전공 과목에서 함께 작업(협력)하는 사람은 누구인가요?
2. 전공 관련하여 귀하가 도움을 청하는 사람을 누구인가요? ?
3. 멘토나 자문 교수가 있나요?
4. 이들과 커뮤니케이션은 어떻게 하나요?
5. 학교 과제 등을 논의하거나 협력할 때 SNS를 사용하십니까?
6. 혼자서 작업하는 경우는 얼마나 자주 있나요?

모바일 및 창작미디어

1. 사용하는 모바일 기술은 무엇인가요?
2. 그 기술을 사용하는 이유는 무엇인가요?
3. 블로그를 운영하시나요? 그렇다면 저희에게 알려주실 수 있으신가요?
4. 모바일 기술을 사용하여 미디어를 만드시나요?
5. 미디어를 만드는 것을 좋아하시나요? 그렇다면 예를 들어주실 수 있나요?
6. 학업을 목적으로 모바일 기술을 어떻게 사용하십니까?
7. 모바일 기술을 활용하여 글을 쓰거나 기타 미디어을 만드십니까? 예를 들어 자신, 친구, 교수 등을 위해 동영상, 이미지 등을 만드나요?

8. 학교, 동료 등과 커뮤니케이션할 때 모바일 기술을 활용하십니까? 그렇다면 어떤 식으로 활용하십니까?

연구에 참여해주셔서 감사합니다. 귀하의 정보는 기밀로 유지될 것입니다.

본 프로젝트 하의 다른 조사에도 참여해주실 것을 요청드립니다. 물론 참여 결정권은 어디까지나 귀하에게 있습니다. 다른 조사의 소요 시간은 본 인터뷰와 비슷하며 유익하고 재미있습니다. 의향이 있으시면 다음 사항을 협조해주시면 감사하겠습니다.

창작미디어 제출: 모바일 기술을 활용하여 미디어를 만든 적이 있나요? 학업을 위해 모바일 기술을 사용하여 무언가(리포트, 동영상, 청각 자료, 이미지 등)를 만든 적이 있나요? 그렇다면 그 창작물을 보여줄 수 있나요? 그 창작물을 어떻게 만들었으며 학업을 위해 어떻게 사용하고 있는지 설명해주십시오. 해당 창작물을 제출해주시기 바랍니다. 새로운 것을 만들어도 좋고, 기존에 있는 게시물 링크를 보내셔도 좋습니다.

모바일 기술을 어떻게 사용하고 있는지 간단하게 설명해주시고, 본 연구 시작 후 모바일 기술 활용 방식에 변화가 있었는지, 변화가 있었다면 어떻게 바뀌었는지 설명해주십시오. 모바일 기술 활용 방식이 변화했거나 변화시키고 싶은 방향이 잘 나타나는 것이면 글(예: 블로그), 청각 자료, 동영상, 이미지 등 어떤 것이라도 좋습니다. 익명 처리를 원하시면 저에게 바로 보내주시면 되고, 익명 처리가 불필요하시다면 귀하의 웹사이튼나 블로그에 게시해도 좋습니다.

연구 참여 의사가 있으시면 _____ 에 있는 동의서를 작성해주십시오. 동의서가 접수되는 대로 위 두 가지 활동 방법에 대해 알려드리겠습니다. 질문이 있으시면 언제든지 gallagher.michaelsean@gmail.com 로 연락주십시오. 참여해 주셔서 감사합니다. 즐거운 하루되세요.

Interview Schedule (English)

My name is _____and I am conducting and translating this interview on behalf of Michael Sean Gallagher. He is currently a doctoral student at the Institute of Education, University of London. Please feel free to contact him at gallagher.michaelsean@gmail.com or http://michaelseangallagher.org. He is being supervised by Dr. John Potter and Dr. Niall Winters, both of University College London at the Institute of Education.

You are being asked to take part in a research study on the use of mobile technology to support learning as graduate students in the humanities. The research aims are to look at how graduate students use mobile technology, how they communicate and create media there, and how that use relates to their learning. All your answers will be used strictly for research purposes and your identity will be kept confidential at all times. If you like to not remain anonymous, to receive credit for your participation in this process, that can be arranged as well. For the time being, however, your identity will be kept confidential. I would like to record the text of this interview with your permission. I will be using these recordings strictly for my research. I would be happy to collaborate with you on the interpretation of these results, if you would like. Do I have permission to record this interview?

Please feel free to answer as much as you would like. There are no wrong answers, just your understanding of how you work with mobile technology and your discipline. This is your story and I will not attempt to change it or divert it. There are basic points I would like to consider, but ultimately I am interested in learning more about you and your work. Do you have any questions before we start?

General

1. Can you tell me your name?
2. What is your major?
3. What is your year of study?
4. What is your research focus or research interest?
5. What do you hope to do after you finish this degree?

Discipline Specific

1. How do you participate in your discipline?
2. What is required or expected of you in your discipline?
3. What are you required to submit?
4. How do you go about constructing an essay?
5. How do you use other forms of media besides text in your work?

Social and Collaboration

1. Who do you collaborate with in your major?
2. Who do you ask for help in your major?
3. Do you have a mentor or faculty supervisor?
4. How do you interact or communicate with them?
5. Do you use social networks to discuss or collaborate on university work?
6. How often do you work alone?

Mobile Technology Use

1. What mobile technology do you use?
2. What do you use it for?
3. Do you use mobile technology to create media?
4. Do you often create media with your mobile technology? Can you share an example?

5. How do you use your mobile technology for your schoolwork?
6. Do you compose (text or media) with your mobile technology? For example, do you create videos or image compositions for yourself, your fellow students, or even your professors?
7. Do you use mobile technology to interact with the university or your peer groups at the university? How?

I want to thank you for your participation in this interview. As I mentioned, your identity will be kept confidential at all times. I would like to ask you to participate in other research activities for this project if you are willing, but you are free to say no. Neither of these activities should be as long as this interview and both will hopefully prove helpful and fun. If you are willing, you will be asked to do the following:

- Media Submission: Have you ever created anything with mobile technology for your learning? If so, I would love to see it and ask you how this artifact was created and how it was used for your learning. Each participant will be asked to submit an artifact (an image, a video, an audio recording, or even a collection of images) that they created and used for learning. This can be just a link to an existing collection online so no additional work is required, unless you want to create something new.

- Submit a short reflection on how they are using mobile technology and how, if at all, that has changed since participating in this study. This self-reflection can be text (a blog post, for example), audio message, video, or image which represent how your way of using mobile technology has changed or how you might want it to change. You can submit this to me

directly if you wish to remain anonymous or post those to your site or blog (if you so desire).

If you are willing, please fill out the consent form at http://michaelseangallagher.org/모바일-프로젝트명/모바일-미디어-프로젝트명/ and we will show you how to easily submit the two activities. If you have any questions, please don't hesitate to ask gallagher.michaelsean@gmail.com. Thank you again for your participation and have a great day.

Consent Form and Information Sheet

Full title of Project: Charting Trajectories on the Peripheries of Community Practice: Mobile technology and multimemberships in humanities learning in South Korea

Name, position and contact address of Researcher: Michael Sean Gallagher, PhD Researcher, Institute of Education University College London

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
3. I agree to take part in the above study.
4. I agree to the interview being audio recorded for accuracy.
5. I agree to the use of anonymized quotes in publications.

Name of Participant:

Date:

Signature:

Invitation

You are being asked to take part in a research study on the use of mobile technology to support learning as graduate students in the humanities. In this research, I am looking for graduate students who might like to take part in a research study on how graduate students participate in the Humanities, whether informally or formally, and how that participation is influenced by mobile technology. I am looking for students who might wish to explore this with me. My research aims are to look at how graduate students use mobile technology, how they communicate and create media there, and how that use relates to their participation in the Humanities.

My name is Michael Sean Gallagher. I am currently a doctoral student at the Institute of Education, University of London. My research focus is on developing mobile environments & communities to support academic practice in the Humanities in higher education. My specific focus are the universities of South Korea. Aside from mobile learning, I am most interested in elearning, online community development, and open learning. I am a facilitator of the MobiMOOC course and a member of the MobiMOOC Research Team. I am also on the Advisory Council of Beni American University in Nigeria. Previously, I was the Education & Outreach Manager, Research & Learning Environments at a very large academic database. In this capacity, I focused on the creation of scholarly networks of activity surrounding the sciences. I have a background in education, having worked as a teacher for many years both in the United States and South Korea (from 1998-2006). I have a Masters in Library and Information Science degree (MLIS), with a concentration in the management of digital information. I also have a Masters in Education (Digital Education) at the University of Edinburgh. I am

being supervised by Dr. John Potter and Dr. Niall Winters, both of the London Knowledge Lab and the Institute of Education at the University of London.

What am I trying to do

I am researching how graduate students in the humanities in South Korea do the following two things:

- How they participate in their discipline through face to face activities or through activities using technology
- How they use mobile technology for social and/or disciplinary understanding
- What they create in mobile technology

What will happen

In this study, you will be asked to do a few things. I will be looking to gather the following from you over the course of the next few months

1. Interview: I am asking each participant to interview either face to face, over Skype, or through another electronic medium. In that interview, we will discuss your mobile technology, how you use it, how you chose your major, and how you participate in that major. This interview will be conducted by a graduate student in Translation & Interpretation and will be scheduled at your convenience. It will last anywhere from 30-60 minutes. The goal of this interview is to have you tell your story on how you participate in your major, what kinds of activities you participate in for that major, and your use of mobile technology for social or disciplinary reasons.

2. Mobile Artifact Submission: have you ever created media with mobile technology? Have you ever created anything with mobile technology for

your discipline (History, Literature, etc.) or just for your learning? Have you ever used media to communicate with friends and social communities? If so, I would love to see it and ask you how this artifact was created and how it was used for your understanding of your major. Each participant will be asked to submit an artifact (an essay, a video, an audio collection, or even a collection of images) that they created and used to understand their major more.

3. Reflective prompts: I will be asking each participant to submit two (x2) short reflections on how they are using mobile technology and how, if at all, that has changed since participating in this study. These reflective prompts can be text (a blog post, for example), audio, video, or image which represent how your way of using mobile technology has changed or how you might want it to change. You can submit these to me directly if you wish to remain anonymous or post those to your site or blog (if you so desire).

After this has been collected, I would ask that each participant be available to answer the occasional follow-up question that might arise from the collected data. Other than this data, that is all I am asking of participants.

Time Commitment

Your total participation will take approximately 3-5 hours of your time over a course of 3 months. This time is broken down as follows:

1. Interview: 30-60 minutes
2. Artifact: 5-100 minutes, depending on whether you have to create them or not.
3. Reflective prompts: 10-20 minutes

This activity will take place over 3 months so there should never be a time when it is too taxing to participate.

Participants' Rights

If you choose to participate, you have rights that you can exercise at any time. These rights are drawn from the British Educational Research Association's (BERA) Guidelines available at http://www.bera.ac.uk/publications/Ethical%20Guidelines. If you have any questions about these guidelines or your rights, please contact me gallagher.michaelsean@gmail.com and I would be happy to speak with you.

1. You may decide to stop being a part of the research study at any time without explanation. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed.
2. You have the right to omit or refuse to answer or respond to any question that is asked of you (as appropriate, "and without penalty").
3. You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.
4. You have the right to privacy and anonymity. Your name and university name will be anonymized in all the data collected, unless you prefer otherwise. You may choose to submit your data without anonymity, for example through your blog or social media account, and that is your choice. Please contact me if you prefer to not be anonymous. Otherwise, your anonymity will be protected at all times.

Benefits and Risks

There are no known benefits or risks for you in this study. Your privacy and anonymity will be protected at all times.

Cost, Reimbursement, Compensation

Your participation in this study is voluntary. You will receive monetary compensation in return for your participation commiserate with the minimum daily wage.

Confidentiality/Anonymity

The data we collect does not contain any personal information about. No one will link the data you provided to the identifying information you supplied (e.g., name, address, email). You may choose to post your own material to your own site or blog as you see fit, but that is your choice. It is possible that this data might be used in academic publications, conference presentations, and for this thesis. However, your anonymity will be protected at all times during those processes. If you prefer not to remain anonymous, that is your right as well. Please contact me if this is the case.

Worked Transcription Examples

Jisun's Interview

Theme	Categories	Evidence	Analysis
Learning and Disciplinary Trajectories	Formal; Socialization & Communication; Faculty Contact	Professors give advice/guidance according to the individual's working ability and interest…In my case the professor	Jisun suggests a free flow of communication with faculty. Self-identifying as a designer suggests

		advised me to work on projects related to producing, that is because he know what I am interested in, what I want to do in the future and **my strong points as a designer**. The communication between professors and students is **very, very good and active**. I think one of the reasons I could easily adapt to the new environment was because of the active communication.	affinity for professional community, yet adheres to disciplinary participation as well.
Mobile Technology Use; Learning and Disciplinary Trajectories	Informal; Socialization & Communication; Faculty Contact	We sit in the class and wait for our professor to check our individual projects one by one. While waiting for my turn I work on my project or have a chat with my friends/boyfriend through LINE or Mypeople.	Some mild incoherence here with overall narrative of adhering to community practice; detour to socialized practice suggests perceived inefficiency in

			disciplinary practice; evidence of mobile technology to manage multimemberships.
Mobile Technology Use; Mobile Learning Practices; Learning and Disciplinary Trajectories	Formal; Socialization & Communication; Faculty Contact; University Perception	Another reason is because I don't have to compete or compare in graduate school. My school doesn't grade on a curve and professors closely observe the individual's personal improvement during the semester. That is a really huge advantage. I usually use KakaoTalk or text messages to contact professors. Emails are usually for inquiries related to class projects or when submitting assignments.	Again, free flow of faculty communication and university structure (note: most Korean universities grade on relative scales) positioned as progressive. Mobile technology as means of managing multimemberships. Personal improvement suggesting trajectory and professor's involvement with that improvement

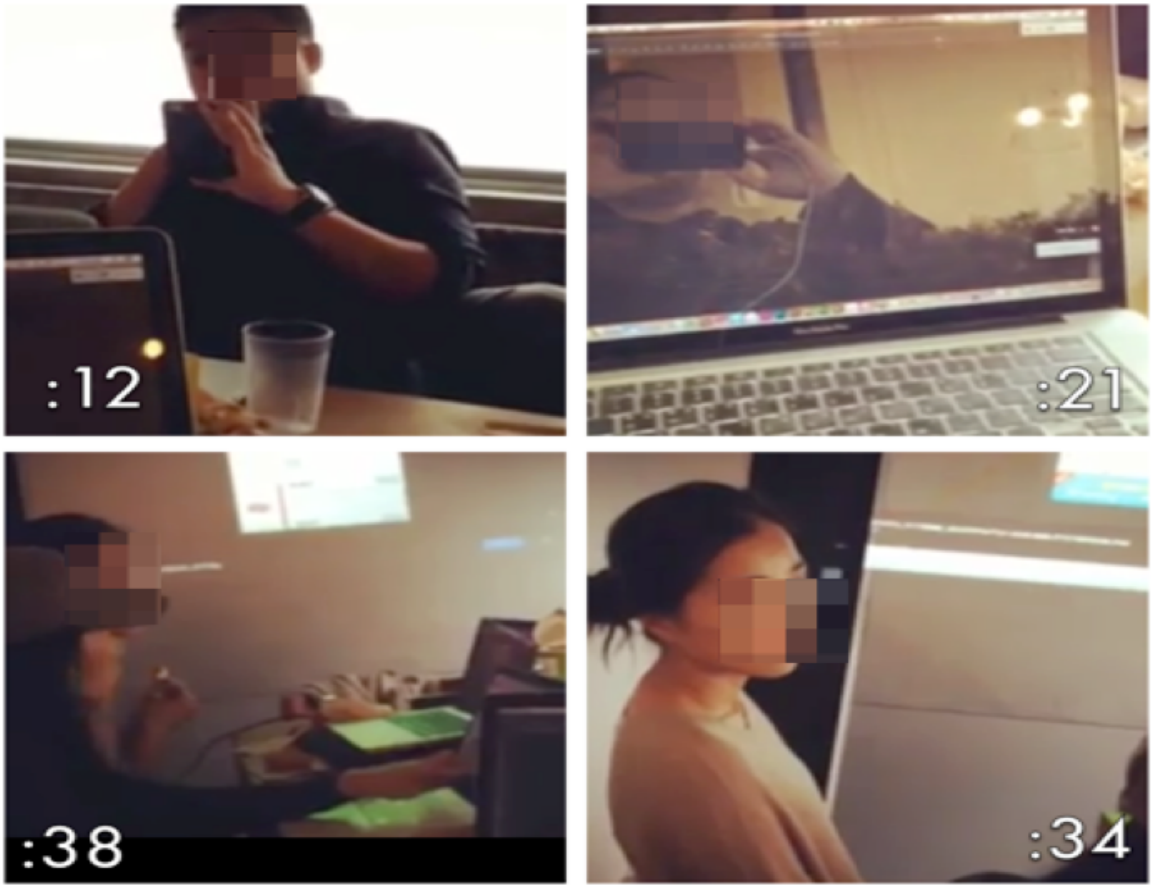
			suggesting disciplinary and professional overlap.
Learning and Disciplinary Trajectories	Formal; Socialization & Communication; Faculty Contact;	I am working in on a project… the government supports students participating in that project by giving around 600,000 won a month. They encourage students to conduct a research about whatever they are interested in, and the participating students have to submit a thesis after 6 months. Professors are also part of this project; they give us advice and check our progress. The government gives our school about 3 or more projects every year and I think we will lack researchers even though	Practical and professional experience gleaned as a result of disciplinary participation. For Jisun, the professional and disciplinary parallel and overlap in many instances, perhaps blurring boundaries. Yet clear affinity or professional community. Free flow of faculty communication.

		everyone in my school participate haha.	
Learning and Disciplinary Trajectories	Formal; Socialization & Communication; Faculty Contact; University Perception	I love the freedom that professors give. They don't 'order' us to do something, we 'help' professors. Also when writing our graduation thesis, students chose their advisors. We chose our own topic and professors give us feedback, I think they seldom suggest.	Role of agency, freedom, and individualized practices. Jisun demonstrates her process of becoming a member of the professional community and rarely articulates any confusion or uncertainty as a result of this freedom.
Learning and Disciplinary Trajectories	Formal; Composition; Socialization & Communication; Faculty Contact;	I usually write a thesis for class projects, so Google, Daum and Naver helps me a lot. Also I use the school E-DB(electronic database) for papers.. I think I use Naver for Korean papers and Google for pictures and English papers. As I told	Composition and research practices suggests a clear understanding of the practices consistent with professional and disciplinary community participation.

		you before, we have about 1 project for each semester, so I don't study papers often. There is a class that doesn't require students to write a thesis- the E-book class. I have to think about the 'interaction' and 'contents'. However, this semester's project is about 'what I know best' so I didn't really do much research. I looked at my previous portfolios, work, reflected on my experience and so on. How I prepare is different from when I have to write a thesis.	Complete ownership of the research process evident through repeated reference to the personal (I, my, etc.). Articulated presentation of individualized practices suggests some mitigation of tacitness.
Learning and Disciplinary Trajectories	Formal; Individualized; Socialization & Communication;	What I do is totally different from what I did before. It is very practical, there are less sitting and studying. The projects I do is the study itself, it is more like an experience	Strong affinity here towards both professional and disciplinary community. While attached to her major, she clarifies

		than study. I feel attached to my major. I felt the need to create my own piece of work' here means that she wants to extend further from 'planning/producing' and have a deeper understanding of a designer's process.	this later as being adherence to designer's practice. Some suggestion here of blurred boundaries between these communities, practice sharing, and so forth.
Mobile Technology Use; Mobile Learning Practices	Formal; Individualized; Composition; Field Work	The reason why I don't use the computer provided in class is because I want my data to be safe and private.	Some evidence here of mobile technology use and practices; Jisun alone presented evidence of a desire for privacy and security, which suggests a shared practice that cuts across multimemberships.

Video Transcription: Jisun



Group Discussion	Data	Time when occurred
Description of Activity	Over the course of 1 minute and 12 seconds, the camera pans over a group meeting for a discussion for students in a graduate level media studies course. The camera stops at intervals (highlighted above) to focus on particular aspects of	: 12 and :21 (documentation of screen data with mobile technology); :34 (group presentation using mobile

	the group dynamic and individual practices, including using mobile technology for documentation, a group leader presenting data, and a subsequent discussion around that presentation.	technology as notebook) and :38 (discussion around presentation)
Type of Activity (informal, formal, individualized, socialized)	Informal (documentation), formal (presentation), socialized (discussion)	:12 and :21 (informal); :34 (formal); and :38 (socialized)
Documented vs. composed	Primarily documented, but some elements of the presentation appear composed (even contrived), namely the elongated time spent on capturing the individual who was capturing the content of his computer screen with his mobile phone	:12-:21
Setting (adapted from Site of Image via Rose, 2009)	Setting is a group study room on campus allocated specifically to graduate students. The setting lends academic prerogative to the video as there is no indication of any activity other	All video

	than socialized and formal learning present.	
Site of Production	Both the setting and site of production are the same as this video was captured and shared without it being transferred and edited via a laptop or a third party application. This presents an authentic, more immediate documentation of	All video
Site of Audiencing	The site of audiencing is within the composition itself; it is positioned at eye level for the majority of the video aside from the sequence when it swings up to capture the presenter, suggesting a degree of authority for the presenter herself. The site of audiencing is also immersive throughout, providing a feeling of being involved in the group study as both a spectator and a participant. This site of audiencing for the aural ambient data, despite the foray into the individual capturing his	:34-:38

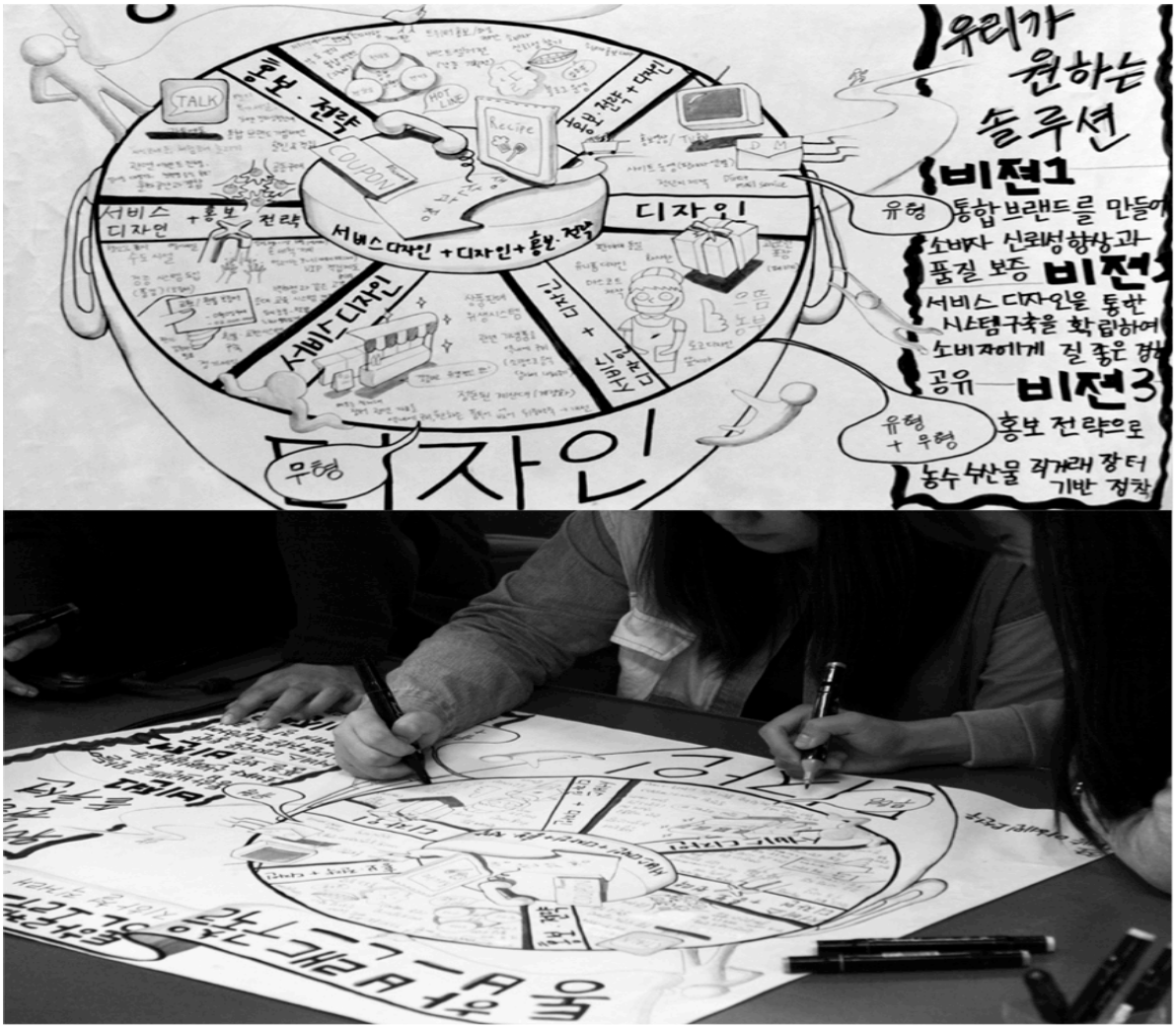
	laptop screen with his mobile phone, centers the activity around the voice of the presenter, which is confirmed through the visual activity from :34-:38	
Content/Expressive Content spatial organisation, montage, colour, content, light and so on – does not necessarily capture the look of an image. Instead, what may be needed is some imaginative writing that tries to evoke its affective characteristics) (Rose, 2011)	The expressive content presented in this video rests with the presenter's audio (the dominant aural thread interrupted only by the occasional shuffling of papers, a cough, a chair moving, etc.), the reclining individual capturing the laptop screen (suggesting an informality), and the social activity taking place (presenter's eye contact and body language towards the audience). The video sequence itself also presents expressive content by moving quickly through several instances of social activity (reclined individual capturing screen, presenters speaking, presenter sitting and discussing	

	with group members). Limited evidence of personalized material aside from technology (one cup, little other evidence of food, bag, etc.) suggesting an overall expressive focus on the presentation and group activity itself.	
Parallel vs. contrapuntal audio or imagery (do the audio and visuals presented in the video parallel other audio or visual submissions?)	Most of the composition provides parallel content: the audio of the presenter supports the video of the presenter for the most part, with the foray visually with the screen capture individual being the exception.	
Technical (length, technology used, etc.)	:45 seconds total, recorded, produced, and distributed on mobile technology	

The sequence of events presented in the above video also establishes a narrative of events occurring over time (Bruner, 1991), an intentional one. The mobile technology is not merely the prop in a casual narrative of activity, nor a substitute for something else. The mobile technology is a tool in a larger process of coming to know (Saljo, 1999) as well a narrative material about people acting in a particular setting, in this case a socialized disciplinary one. The question that emerges from this analysis of mobile technology use amongst these participants is

which setting is guiding this activity? Is this a narrative of disciplinary engagement, mobile technology use, the norms of Korean socialization and social hierarchies, or a combination of these? This will be discussed further later in this and the concluding chapter.

Image Transcription: Mihyeon



Attribute	Data
Site of Image (Rose, 2009)	The site of the image is both the table and working space of these graduate students, and the

	composition itself, a drawing representing a proposed workflow for a mobile design.
Site of Production (Rose, 2009)	The site of production is the same as the site of the image. First, the images were taken using a mobile phone; secondly, they were composed into a montage using a mobile application.
Site of Audiencing (Rose, 2009)	The site of audiencing is critical to understanding these images. First, we are positioned over the image itself, suggesting its importance. Secondly, we are given a position of outside the composition with a strong emphasis on the activity involved to generate the composition. Hence, in one overall composition, we are presented with the materials, the composition, and the practices in which this composition was constructed.
Compositionality (Composed vs. documented, etc.)	These images are both composed (the use of the montage suggests this is not mere documentation, but a considered construction of meaning) and documented (the object itself being the larger visual workflow). However, the overall presentation is carefully composed, suggesting the intention of
Content/Expressive Content (Taylor, 1957 via Rose, 2009)	Expressive content includes the human-like characters drawn into the workflow, which emphasize the usability of the subsequent design. Further, expressive content includes the three

	individuals coordinating activity into one overall composition, a fairly sophisticated socialized approach to disciplinary participation.
Parallel vs. contrapuntal imagery (adapted from Monaco, 2009) (within the image itself): how do the materials 'speak' to one another?	Highly parallel visual structure. The composition and then the practices used to construct the composition are presented.

From this artifact, two compositions will emerge in subsequent group activity: a written composition or report as well as a design for a mobile application. In this one activity, the disciplinary focus on both professional and academic practices are acknowledged. These graduate students are being prepared for professional careers outside of academia in creative or design industries; they are also being prepared for academic participation through the writing of an academic paper based on their design, their collected data, their theoretical positioning, and all of it linked to research. This analog practice also reveals a highly multimodal learning practice. These graduate students are actively transforming any number of modes from one to another. The data collection using mobile technology alone is producing video, audio, imagery, and textual data. The group discussions are producing textual data from multiple participants, as well as imagery (KakaoTalk allows for drawing, imagery, video, and other forms of media to be inserted directly into the discussion). This analog rendering of that data into a loose organization involves text, imagery, and assembly. The subsequent paper and mobile application require further transformation and assembly. All in all, this is an incredibly complex series of interrelated practices designed to make meaning

in the discipline. Some of these practices directly employ mobile technology and some are influenced, or inspired by its outputs (collection of field data or mobile media spurring an analog brainstorming practice as described above).

The analog and mobile brainstorming practices described above lead to (or less commonly, emerged from) composition practices, the process by which data and materials are collected and presented as knowledge constructs for the larger disciplinary community. This does not suggest exclusively a rigid formality consistent with a final essay or a final project; rather, compositions can include media and/or text assembled together merely for the purpose of extending a disciplinary discussion, or as a sort of preliminary media output (a recording, hastily edited and presented for group discussion). Compositions can range from video clip to a full academic paper. Some of these composition practices were discussed briefly in the previous section on the use of mobile messaging applications as composition tools, but what follows is an attempt to present a range of composition practices and how these are mediated by mobile technology. Many of these examples were clearly explained by the participants with little to no probing required. It was clear that many had consciously reflected on their practices and were comfortable in their applicability to their disciplinary participation. The first passage illustrates a series of practices consistent with humanities study, fieldwork, and mobile technology (framing a research question, discussion, data collection, research, media creation, and presentation).

Related Transcript Data: “I prefer drawing (by hand) complicated concepts. When it is laid out in drawing, I think it is much easier for me and other people to understand. I use those drawings and create a diagram or image using my computer.”

Audio Transcription: Jisoo

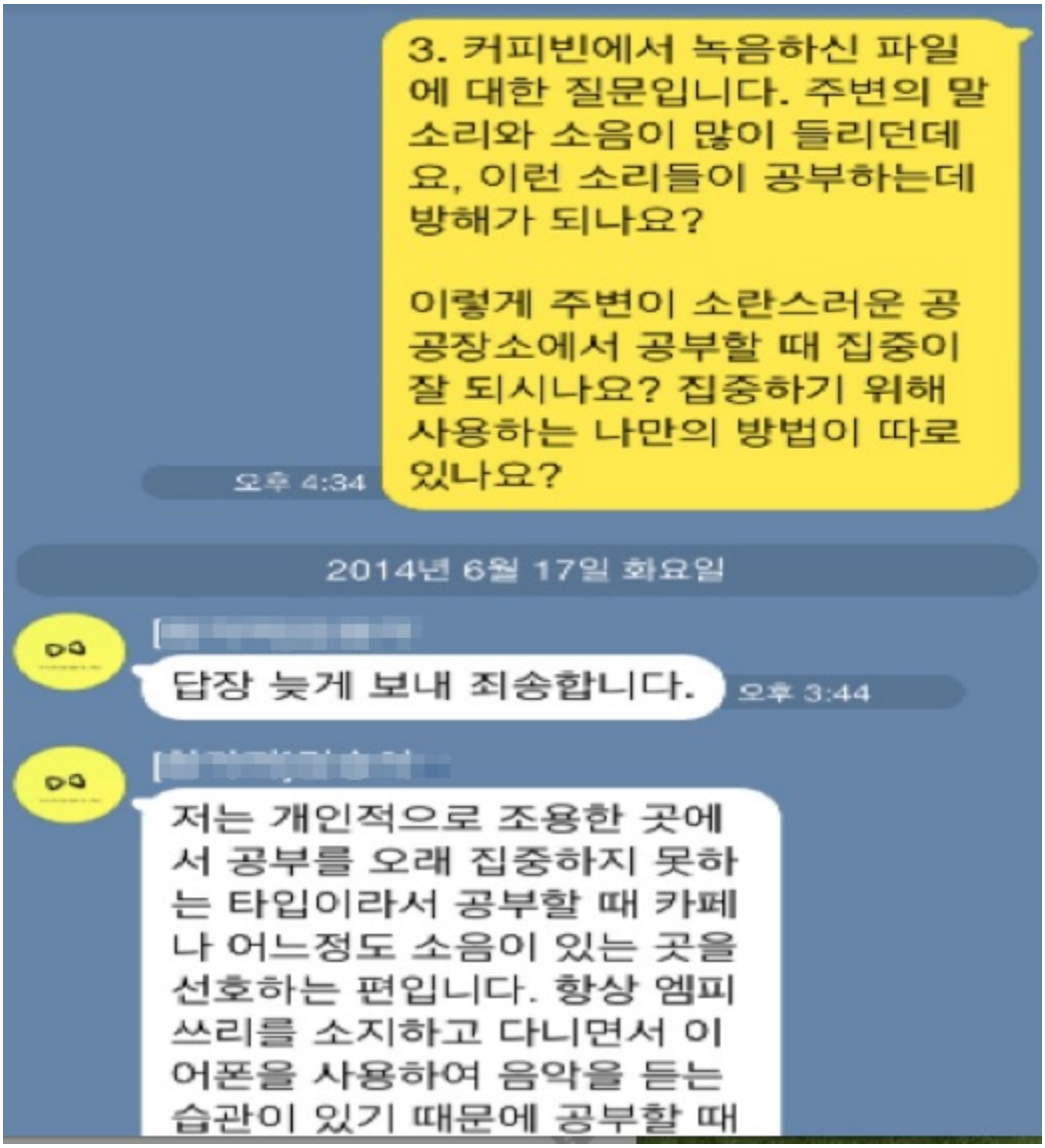
Audio Data

Attribute	Data	Time when occurred
Technical (length, technology used to produce)	6 minute and 25 second recording produced through mobile technology	
Description of Activity	A variety of overlapping sounds: ambient chatter in the background suggesting a public place. Music playing in this public place. The occasional sound of typing or shuffling of papers. Some conversation originating in the foreground of a discussion of a particular project. We faintly hear the graduate student whisper words as if she is reading and trying to concentrate over the din of the space. The occasional sighing. The sound of a bag opening and more shuffling of paper; a brief sniffle.	Whispering (2:55-3:07); opening of bag (3:57-4:10)
Sound (silence vs. sound)	Lack of silence throughout. A public place so less capacity for controlling the sound level although the recorder (graduate	

	student) is seemingly trying to remove her aural presence from the audio (aside from the shuffling of papers); however, this might be related to the shuffling of papers (reading).	
Sound (speech vs. ambient)	Whispered speech in the foreground briefly, but the rest of the sound is ambient; several overlapping sets of voices in the background; music, etc.	(2:55-3:07)
Composed vs. documented (genre)	Documented as there is little evidence of the graduate student at all aside from the whispered speech briefly. Little of evidence of this recording being a performance as much as a documentation.	
Spatial acoustic self-determination (Fluegge, 2011)	The way the audio is presented suggests little capacity for controlling the sound space around the student, a lack of spatial acoustic self-determination. However, the reflective prompt data identified that headphones are used to block out the sound.	
Parallel vs. contrapuntal sound (Monaco, 2009) (does it relate to other	Presumably this is the coffee shop discussed in the same participant's interview transcript, a place where she studies and uses headphones to block out	Time (when)

submissions (video, imagery, text)?)	the sound (as discussed in her reflective prompts). The audio did present parallel structure to the imagery in that analog (paper, notebooks, pens) technology was as important as mobile technology (which was used for documentation)	

Reflective Prompt Transcription: Mihyeon



(Illustration: KakaoTalk screenshot illustrating discussion transcribed in table below)

Functional (length of answer, answers the question asked)	Direct answers to the questions asked; answers varied but ranged from one paragraph to three
Informal/formal response (emoticons, informal language, etc.)	Formal but approachable language in keeping with a formal interview. No use of emoticons or informal phrases
Field of production	Generated on the mobile phone *in situ* in locations ranging from coffee shops and buses (both mentioned specifically)
Parallel vs. contrapuntal (does it relate to other submissions (video, imagery, text)?)	Yes, the reflective prompt text discusses mobile uses supported in the artifacts (images of pottery, art as discussed in the passage below)
Does it confirm themes emerging from other data?	Yes, confirms themes emerging from the other data in relation to mobile technology use, mobile media practices, and disciplinary engagements.
If not, does it contradict or subvert?	Supports data from interview regarding methods for participating in the discipline and how mobile technology supports that participation

Representative Passage	I write down what the pictures are about, what I learned etc in a notebook (handwriting). I sometimes make a screenshot of the pictures I zoom in with my smartphone and use them when writing a paper. I share my notes with my study group. Sometimes, I deepen my study and develop what I learned from the pictures into a topic for my final paper. If I can't understand something, I make a screenshot of it and share it with my friends too.

Thematic Tables Emerging from the Transcription and Analysis

What follows are the tabular presentations of themes as cross-referenced against the individual participants. These are categorized according to the individual theme being referenced. Each theme includes several tables: the first being an overall summary of the theme and its presence and strength in the data of the individual participants, followed by a series of tables providing the evidence itself (across text, visual, video, and aural data). For the purposes of the summary tables, a system of annotation was developed to indicate the strength or frequency of the theme across the contributed data. This is intended to provide the reader an accessible of reading the results before plunging into the individual themes in greater depth. The system of annotation is devised as follows:

- **+**: theme present in the data across several modes (text, aural, visual, and video) and/or at considerable frequency. Strongest correlation
- **√**: theme present in the data at least in one mode and with more than one mention. Strong correlation.
- **---**: theme found in the data with one mention. Weak correlation.
- **x**: theme not found in the data. No correlation.

In the first theme below, Table #1 illustrates the presence of data related to the facets of mobile technology use as adapted from Park (2011): formal, informal, individualized. This is cross-referenced against the majority of the participants (n=12 out of a total of 25 participants). This is followed by Tables #2-#4 which present evidence of these emerging themes.

Theme #1: Disciplinary Trajectories as Overlapping Non-exclusive Movements of Identification and Membership

Description: this theme emerged from the data as both a direct answering of the research questions- *Does this combination of mobile technology use and media practice suggest a learner trajectory (Wenger, 1998) in respect to the disciplinary community?* and *If so, is this trajectory inbound, outbound, or boundary?* The data presented considerable evidence across a range of modes (aural, visual, video, textual) and across a range of practices and artifacts, which were thematically categorized as trajectories. These trajectories were determined according to the mobile technology use, the media and learning practices, and the mobile artifacts being produced by these graduate students in the course of their learning. These trajectories include inbound trajectory (suggesting a strong community identification with or alignment with disciplinary practice), outbound trajectory (suggesting a subversion of disciplinary practice, or a lack of identification with

the disciplinary community) and boundary trajectory (which presented evidence of the graduate student establishing, maintaining, or attempting to maintain multimemberships across several communities (disciplinary and professional, for example). These themes were strongly correlated (based on the data) across themes based on the consistent application of analysis.

In the following thematic table, the data suggested that the majority of the graduate students were exhibiting a boundary trajectory by adhering to, or identifying with (or both) the community. For the most part, the two communities being adhered to were the respective disciplinary community and the professional one. For example, several participants adhered to the professional and media practices of media design while maintaining allegiance to the academic practices of media studies. This is cross-referenced against the majority of the participants (n=12 out of a total of 25 participants). What is presented below is an abbreviation of the annotation scheme adopted for the first two themes in this chapter. It presents the dominant trajectory, but makes mention of other data suggesting a competing trajectory. For example, there was some evidence of subversion (presented as outbound trajectory) in those that presented an inbound trajectory otherwise. This is followed by subsequent tables which present evidence of these emerging themes (inbound, outbound, and boundary).

- **+**: theme present in the data across several modes (text, aural, visual, and video) and/or at considerable frequency. Strongest correlation
- **√**: theme present in the data at least in one mode and with more than one mention. Strong correlation.
- **---**: theme found in the data with one mention. Weak correlation.
- **x**: theme not found in the data. No correlation.

	Case #1	Case #2	Case #3	Case #4	Case #5	Case #6	Case #7	Case #8	Case #9	Case #10	Case #11	Case #12
Inbound							+				+	√
Outbound	---		---	√			---	√				
Boundary	+	+	+	---	+	+		---	+	+	--	--

Disciplinary Trajectories Attribute #1: Inbound

	Textual Evidence of Inbound Disciplinary Trajectories
Case #1	**I plan to go on with my studies so I frequently visit the 'Ministry of Foreign Affairs (MOFA)' webpage, or look at any other academic materials using my phone**. I usually look at the main board (Ministry news). Also, I receive weekly newsletters from the Institute of Foreign Affairs National Security. The newsletters are written by the professors in that think tank.
Case #2	In my case the professor advised me to work on projects related to producing, that is because he know what I am interested in, what I want to do in the future and **my strong points as a designer**. The communication between professors and students is very, very good and active. I think one of the reasons I could easily adapt to the new environment in

	(university name hidden) was because of the active communication."
Case #2	"I remember one interesting class where I told the students to stick 'post-it's, with questions written on it, on to tables and chairs in the classroom. Surprisingly, they chose to stick their 'post-it on to places I could never have imagined, like on walls or behind objects and so on. Then, the students with no idea of where the 'post-it's were actually found every piece of post-it that the previous class had hid. This incident made me think about **'peer knowledge' and about the uniqueness of lectures** not using digital equipment. Digital still feels like a one-off thing to me."

Disciplinary Trajectories Attribute #2: Outbound

	Textual Evidence of Outbound Disciplinary Trajectories
	There are 50 people in one year, 240 people in total. We used to be close and have many gatherings. However, it is different now; the network is much weaker than before. People are more focused on getting jobs.
	I remember one interesting class where I told the students to stick 'post-it's, with questions written on it, on to tables and chairs in the classroom. Surprisingly, they chose to stick their 'post-it on to places I could never have imagined, like on walls or behind objects and so on. Then, the students with no idea of where the 'post-it's were actually found every piece

	of post-it that the previous class had hid. This incident made me think about 'peer knowledge' and about the uniqueness of lectures not using digital equipments. Digital still feels like a one-off thing to me.

Disciplinary Trajectories Attribute #3: Boundary

	Textual Evidence of Boundary Disciplinary Trajectories
Case #1	As I team we have to get everyone's opinion in the project and there are a lot of adjusting to do. But when I work by myself, my project as 'my' colors in it; I can put in more of my thoughts and it becomes more special. Also when I work on my own, I have to be in charge of everything, from the beginning to end. So after I complete a project on my own, I feel like I have learnt a lot. As I said, I want to be a professor after graduation. However, it is not easy. A lot of students quit along the way because they can't earn enough for their living. Students who finish their PhD give lectures at schools. I want to get a doctorate however there are many economic barriers so it is just a possibility.
Case #2	In my case the professor advised me to work on projects related to my interests, **that is because he know what I am interested in, what I want to do in the future and my strong points as a designer**. The communication between professors and students is very, very good and active. I think one of the reasons I could easily adapt to the new environment in

	school was because of the active communication. Another reason is because I don't have to compete or compare in graduate school. **My school doesn't grade on a curve and professors closely observe the individual's personal improvement during the semester**. That is a really huge advantage.
Case #3	The 6 months I took off after graduation was very important to me. I didn't do anything special, I did part times jobs and spent time with my parents. However in those 6 months, I had a lot of time to think about my future and about graduate school. **When I was in college, I was too busy writing reports and doing assignments so I didn't have time to really think about what I want to do**. Also, since my hometown is in Beolgyo I had to live apart from my parents. I felt emotionally unstable and lonely. I couldn't 100% focus on my studies when I was at school. I felt really stable and comfortable during the 6 months I stayed with my family so I could really think hard about my future. It was the most important 6 months of my life.

Theme #2: Mobile Technology Use as enabling graduate participation

Description: this theme emerged from the data as both a direct answering of the research question- *How do graduate students in higher education in the humanities in South Korea use mobile technology to support their learning practices?* The data presented considerable evidence across a range of modes (aural, visual, video, textual) categorized into support for formal, informal, and individualized (adapted from Park, 2011) learning practices. Please note that the fourth categorization,

socialized activity, is represented in the second theme on mobile & media practices. Overall, many of the participants demonstrated considerable activity across these three categorizations, suggesting the centrality, or general importance, of mobile technology in their overall learning practices.

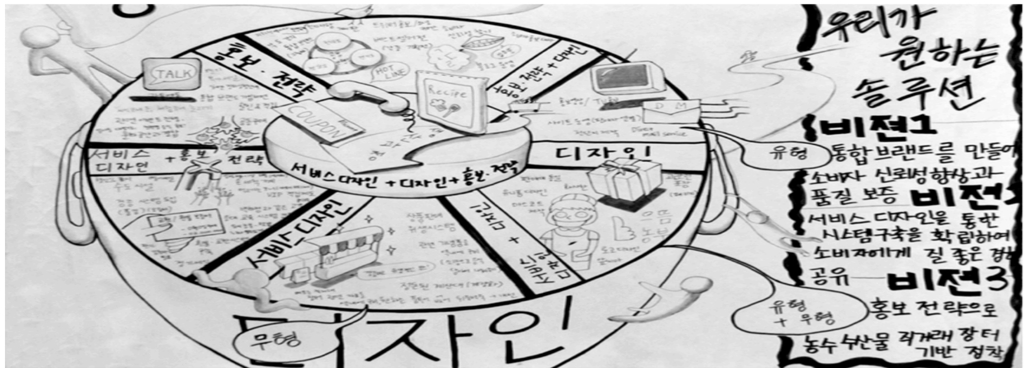
	Case #1	Case #2	Case #3	Case #4	Case #5	Case #6	Case #7	Case #8	Case #9	Case #10	Case #11	Case #12
Formal	√	√	√	---	√	---	x	---	√	√	√	+
Informal	+	+	+	√	+	+	√	√	+	√	√	√
Individualized	+	√	√	+	---	√	+	√	√	√	+	+

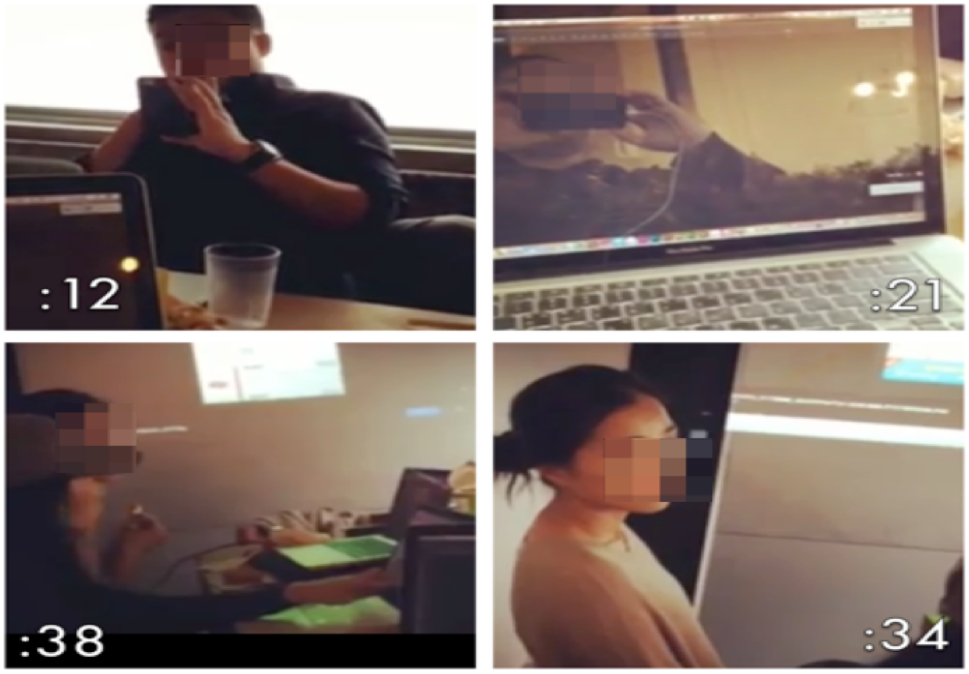
Mobile Technology Use Attribute #1: Formal

	Textual Evidence of Formal Mobile Technology Use
Case #1	I plan to go on with my studies so I frequently visit the 'Ministry of Foreign Affairs (MOFA)' webpage, or **look at any other academic materials using my phone**. I usually look at the main board (Ministry news). Also, **I receive weekly newsletters** from the Institute of Foreign Affairs by the professors in that think tank.
Case #2	I think the most important things is that they allow us to **expand small picture and look at it more closely**. Some art paintings are the size of my hand, some are bigger than

	2meters. With the **help of mobile devices I can enlarge the pictures with my 2 fingers and look more closely at the part I want to study**. Looking at pictures of paintings is as important as looking at it in person. When looking at them through pictures, **I can look at the paintings more carefully**. In that case I can learn about them through pictures.
Case #3	I use my smart phone the most. I have a tablet but don't use it often. I also use my laptop when I need to use MS word. In my phone I **have an app that allows me to download English current-affair magazines**. I read a lot of articles from 'Economist' and watch a lot of CNN. One has to know what is going on in our society to be good at my major. That is what my professor always emphasizes. In order to participate actively in the discussions, I really felt the need to keep up with the current issues in our society. It was not my intention to get in at Reuters. I just wanted to earn some pocket money.

	Visual Evidence of Formal Mobile Technology Use

Case #1	 우리가 원하는 솔루션 비전1 비전3 디자인 
Case #2	 cafein + Add this place Name Address Tel. 와이파이 콘센트 주차/발렛 흡연석 애완동물 Cancel OK

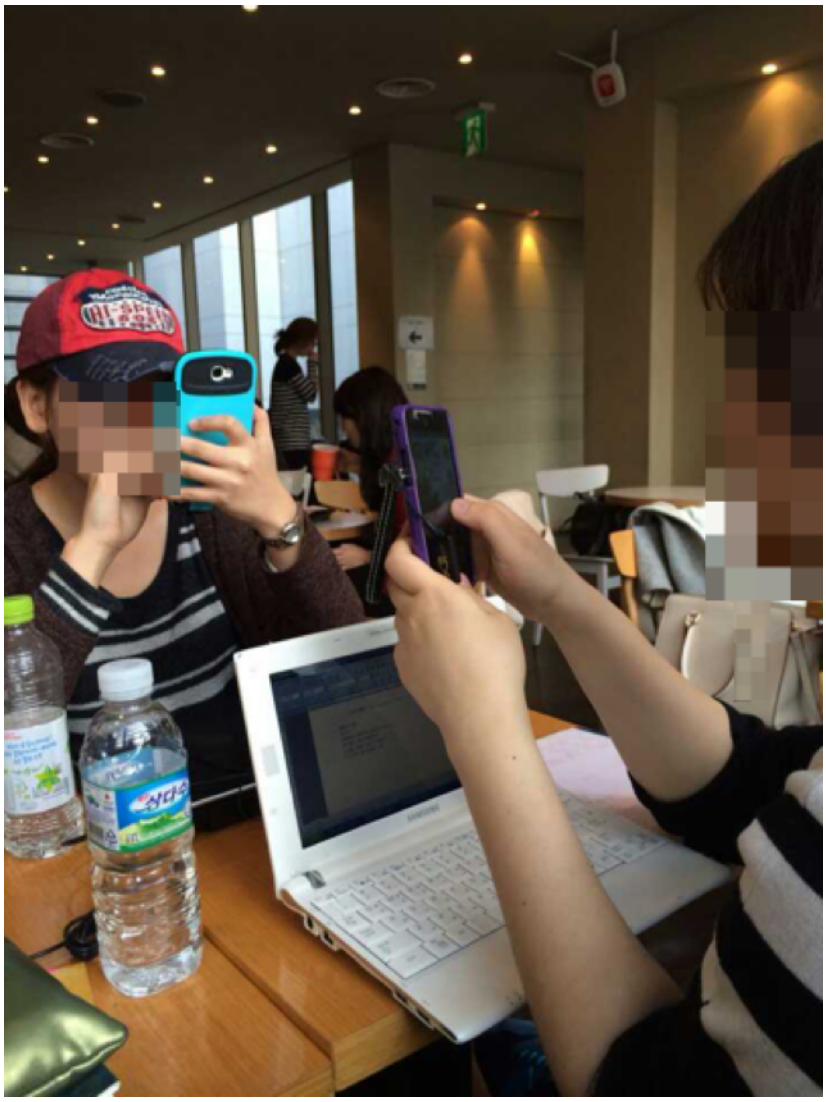
Case #3	
	Audio Evidence of Formal Mobile Technology Use
Case #1	http://wp.me/a3nr3r-61t
Case #2	http://wp.me/a3nr3r-61k
	Video Evidence of Formal Mobile Technology Use
Case #1	

Case #2	

Mobile Technology Use Attribute #2: Informal

	Textual Evidence of Informal Mobile Technology Use
Case #1	I like uploading my daily life. For example, I take pictures of pretty scenery, things I eat, where I study and so on just for fun. I don't really think taking pictures is important when studying Art History.
Case #2	I wake up to my alarm and take the subway to school. We normally have to read scenarios that other students wrote so I read it again on my way to school using the Naver Café app on my phone. In class, for example directing class, the presenter turns on a movie and the other students read the report that the presenter uploaded on the Naver café while watching. Usually the report is about screen shots of the

	movie scenes and the presenter's opinion on each scene. After class I do my assignments. If I have to write a scenario or a report, I go to the library and write with my laptop. If I have to watch video clips or a movie, I go to the library's iPad room. I use my iPad a lot because it is much faster than my laptop. Also, it is much easier to check the videos uploaded on facebook when using my iPad. Oh we have a Facebook page where students upload video clips. We used to use Cyworld clubs or cafes or even Naver cafés for uploading videos but it was inconvenient since they were not compatible with the movie making programs we use on Mac. Nearly all students use Mac because we have to use a program called 'final cut' to make a movie which of course, only runs on Mac. Facebook is convenient because first, it is compatible and second because the provide alarm whenever something new is uploaded. When I have to share materials with teammates we also use Naver Line. I do my assignments until it gets dark and before I go home I gather with my colleagues and share critics about each other's scenarios.
	Visual Evidence of Informal Mobile Technology Use

Case #1	
Case #2	

Mobile Technology Use Attribute #3: Individualized

	Textual Evidence of Individualized Mobile Technology Use
Case #1	I wake up late, around 10-11 am. I have a roommate and we live near school. We take the shuttle bus to school and before my 2-3 o clock class I read the text and books we are going to study in class. My laptop's keyboard noise is loud so I don't use it to organize my thoughts, I underline the book as I read. In class I use my slate tablet pc and Bluetooth keyboard to take notes. I use 'one note' in windows 8 and it automatically saves my notes on to one drive. I use my tablet and Bluetooth keyboard because I can't possibly write everything down in class. We learn a lot in class, so it is more convenient to make a digital word file. It helps me reflect what I learned in class more easily and I can organize my note and thoughts more efficiently. Based on my notes I also write papers and reports. I also save my files in Dropbox and use it when I need to print out my notes. I also use 'Evernote' it provides the alarm function and I can make quick and short notes. I organized the notes later when I have time. I tried to write things down at first but the load was too much so I decided to use my tablet pc. In classes where there are a lot of discussions, I can't write down a lot. But for nearly all classes are lecture based. **My tablet pc recognized writing very well. So I also take notes with my digital pen. I think writing things down and typing is**

	different. Writing helps me organize and express my thoughts better so I write and type on my tablet pc.
Case #2	When I come to school, it is difficult to concentrate solely to class because I have to reply messages on my iPhone. I also look up every time something I am not sure of pops up during the lecture.
Case #3	**Yes but it is a private blog which only I can see. It is rather like a journal. I write down my thought and feelings every day**. When I studied Landscaping in undergraduate school I made a lot of powerpoints and videos. I used photoshop, illustrator, 3dmix and so on. That is because Landscaping requires a lot of output.
	Visual Evidence of Individualized Mobile Technology Use

Case #1	
Case #2	

Case #3	
	Aural Evidence of Individualized Mobile Technology Use
Case #1	http://wp.me/a3nr3r-5WI http://michaelseangallagher.org/wp-content/uploads/2014/11/A-recording-that-shows-my-creative-or-working-process.m4a

Theme #3: Learning & Media Practices for Disciplinary Engagement

Description: this theme emerged from the data as both a direct answering of the research questions- *What media practices are presented in this mobile technology use?* and

What mobile artifacts (compositions of text or multimedia designed to make meaning for graduate students in their disciplines) are being produced in mobile technology in South Korean higher education in the humanities? The data presented considerable evidence across a range of modes (aural, visual, video, textual) which were thematically categorized as learning practices. Further subcategories (sub-themes) were identified in the data, which correspond to those presented below. These

include orientation & navigation, socialization & communication, composition, dissemination, and field practice. Many of these subcategories aggregated a broad range of practices, but they all involve the use of mobile technology for either direct or indirect disciplinary participation. Overall, many of the participants demonstrated considerable activity across several of these subcategories, suggesting the diversity of practices emerging from, or influenced by, the use of mobile technology in their overall

Mobile Media Methods Attribute #4: Field Work

	Textual Evidence of Mobile Media Methods: Field Work
Case #1	I go to art exhibitions often. There are a lot of special exhibitions at National museums. I also try to go on field investigations often. I also read books related to what I learn. As I told you, Art History majors go on field investigations once every semester. Students who are in charge of planning make the schedule and we follow it. Usually I don't have a say in it. This time we are going on the field investigation with Western history majors, and one of their professor is retiring. Professors in Western history major really hates moving around so we are going to the beach at Gangwon-do which is an irony because Gangwon-do is famous for their hills and temples. Since we go on field trips together, my colleagues and I are really close. It is really fun looking at the stars at night while talking with my colleagues.
Case #2	I am going on a field trip next week. Art history majors go one official field trip every semester. Other field trips are

	planned by individuals. There are many museums and pagodas in the suburbs. When we go on field trips together, it is more fun and educational because we have discussions about the pieces, exchanging each other's opinion. For example, last time we had a discussion about whether the pagoda we are looking at is from the 18th century or the 19th century. Those discussions really help my study because I get to learn about facts and opinions I have never thought of before. However, I don't really write them down.
Case #3	We learn a lot of theory but the most important this is to make field investigations. We go on at least one field investigation every semester. I think I went to every important historical site except Jeju. Looking at pictures is important too but we also have to see the real thing. I took classes on paintings and handicraft last semester, I find everything interesting. However I don't like pottery. It is too complicated.
	Visual Evidence of Mobile Media Methods: Field Work

	
	 
	Aural Evidence of Mobile Media Methods: Fieldwork
	http://wp.me/a3nr3r-64p (Fieldwork on the subway)

	Video Evidence of Mobile Media Methods: Field Work