A Longitudinal Development Report on a Business Communication Course in Australia

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Abstract

Business Communication has been taught to students studying an undergraduate degree in computing at Charles Sturt University, Australia since the degree was introduced over 15 years ago. The importance of developing soft skills in a technical degree has been maintained and strengthened with several strategic changes in curricula and teaching-learning methods. The subject is taught to both domestic and international student audiences. This paper outlines the changes in how Business Communication has been taught utilising several strategies, adjustments made through the years with feedback from employers and faculty. It also outlines the evolving classroom activity - from a basic lecture-tutorial model to one that incorporates authentic learning experiences and strategic support for those whose first language is not English. The longitudinal view of the subject will assist many others developing a similar subject to understand the complexities of community demand, employer requests and meeting the needs of academia.

Introduction

Charles Sturt University is a regional multi-campus university located in six cities in New South Wales, Australia. The university runs its courses in both on campus and distance education modes. Of the 44,000 students, about 42% of its student population study online (Bedwell, 2018). Business Communication in the undergraduate Information Technology and Computing course was first offered in 2002 following a course review. This initial offering of the subject in 2004 was the recognition of information as a critical resource in a technological age and the need for information to be collected and effectively disseminated. The subject's (may be called unit in other universities) purpose was to demonstrate techniques to gather information and to teach the variety of approaches to present information on the Internet. The impetus to supply communication skills to business and information technology students came from multiple commentators as a preparation for the upcoming activities from electronic commerce (Abell & Lim, 1996; Lymer, Johnson, & Baldwin-Morgan, 1997; Poon & Swatman, 1997). The approaches included different writing styles as well as an online presentation mode. Hypertext Marked-up Language (HTML) was selected as the authoring language to present information on the World Wide Web. Strategies included exposing students to various asynchronous and synchronous communication methods as proposed by Mabrito (2006). Various hypermedia tools as well as the study of intellectual property and information security formed the subject. The subject is compulsory study for the award of an undergraduate Information Technology degree. It consisted of 14 teaching weeks in the dual semester system and moved to the trimester which has 12 teaching weeks from 2010.

The First Online Learning Environment

The university delivered to distance education students using a paper-based Subject Outline, Subject Guide, and a book of Readings in a study pack as outlined by Garrison (1993). Some subjects may have included a CD-ROM. This pre-packaged self-instructional material became the primary method of distance education in the 1990s. In 2008, Charles Sturt University introduced CSU Interact, a

learning management system (LMS) based on the open source Sakai framework, a worldwide collection of higher education institutions using the community source model of software development. The change and innovation strategies used by the university is based on the work of Kotter & Cohen cited in Uys (2010). The university recorded 61.5% of students enrolled via online mode (Krivokapic-Skoko & Sappey, 2012). The university's leadership commenced an aggressive transition into the paperless environment over the next two years. The subject had to prioritise what analogue-based technology it would retain. They were mainly readings that had to be scanned into the Adobe Portable Document Format (PDF) and the need for a host location to make them accessible. There was also the issue of copyright control and permissions obtained to changeover to a new mode of distribution. As this subject used a textbook, publishers were contacted for an online edition. These were the early days of online academic material. The impact of Kirtsaeng v. John Wiley in 2016 ("Kirtsaeng v. John Wiley & Sons," 2019) saw the move to global pricing for textbooks by Australian book distributors. This rapid rise in pricing of textbooks impacted the cost of studies (Cook, 2016; Lines, 2017). The pace to move to electronic resources seemed the way forward. Multiple standards were emerging at that time and this subject had an early trial of a commercial publisher product called MindTap in 2013. This was reported in an early study (Chan & Prasad, 2014). National Internet filtering/censorship became an issue in some countries where distance education students studied online (Faris & Villeneuve, 2008). Publishers also had their own territory of sale restrictions. The good relationship between the subject convenor and publisher solved many of these early issues utilising resources that were classified as Open Educational Resources (McGreal, 2012).

In 2008 the Prime Minister of Australia, Kevin Rudd made a National Apology to the Stolen Generations. This event of national significance was reported by Cuthbert & Quartly (2013). Wright (2018) recalled the moment that "the Prime Minister reached across to the Leader of the Opposition and shook his hand. Every member of the House of Representatives present rose and supported the motion. Parliament had apologised and tears flowed. This awareness of Indigenous Australian created the need for all Australians to understand them better in communication and in culture." Nakata, Nakata, Keech, & Bolt (2012) documented the raising questions about pedagogical approach and challenges the primary educational goal. Modules of study in Indigenous communication were discussed for this subject, drawn up with Indigenous academic staff participation, and approved by the University's Indigenous Board of Studies. One of the most important lessons learnt was about the aboriginal lack of eye contact when spoken to. This was a custom and gesture of respect. In western society, averting gaze can be viewed as being dishonest, rude, or showing lack of interest Queensland (2013). Trial modules in Indigenous Communication were written and taught in 2009. It was fully integrated in the subject in 2011. This was a time to work with permissions and use of copyright of aboriginal images and material in an electronic format. Ongoing consultations and requests filled the "to-do" sheet. In the second year of running this topic, faculty management had decided to create a new subject dealing with this topic and the material was transferred over to the new subject. This move was in line with "the growing frustration with the difficulty of questioning traditional/cultural/community forms and sources of Indigenous authority pivots around the Indigenous political and scholarly allegiance to conceptualisations of Indigenous worldview as a counter-narrative to the Western (Nakata et al., 2012). One of the most rewarding ways of moving forward towards understanding, acceptance and inclusion of actual teaching material was to spend time with the Indigenous Elders listening to them. At times, these lasted hours – every one of them well spent.

Business and Technical Communication Ethics

The establishment of the online environment progressed in the economy and software tools became more powerful in crafting and designing web pages. A subsequent course review in 2009 introduced changes that focused on students acquiring the skills of delivering good quality messages. Fundamental concepts of the communication process as well as improving general writing skills so that students would be able to write online memos, letters and produce technical reports. Interpersonal skills and intrapersonal bases of effective written communication such as audience awareness, sender credibility, self-concept, empathy, and assertiveness were introduced. The proliferation of web sites and information dissemination meant that the general public were inundated with information. The term “information explosion” reflected the rapid amount of published data and the effects of this abundance became overwhelming (Kadiri & Adetora, 2012). The review panel introduced studies in ethical business communication in the review of 2011, and strategies in presenting information communication technology for effective communication become centre stage. Samples included crafting messages for websites and online captioning. At this review, the web programming (HTML) component of this subject was moved to another subject.

Commercial Teaching Partners

Australian universities expanded into the private sector with the appointment of commercial education providers. The change in Australian government policies between 2007-2009 also broadened access to publicly-funded subsidised student loans, which has resulted in the emergence of small and large private higher education providers and consortiums offering language, vocational and higher education courses (Bennett, Nair, & Shah, 2012). As the university did not have campuses in the cities, a commercial partner which ran undergraduate and postgraduate courses for international students in the metropolitan Australian cities was appointed (Andrews, 2014). The challenge of dealing with an international cohort and a domestic cohort has been highlighted by many commentators. Studies conducted by the Grattan Institute reflect a difference in passing rates (Norton, 2019). The first item that haunted subject developers was the literacy level of the new audience group: mainly non-English speakers. This was emphasised by many commentators such as (Coley, 1999; Sawir, 2005). International students being admitted into the course may not have the level expected of them, and this was highlighted by Worthington, O'Neill, & Selvaratnam (2019). The change in teaching style from a constructivist combined with real world problem-solving teaching style had to change to a situational methodology. Assignments had to be changed to an instructional scaffolding style as proposed by Grady (2006). Supplementing this method, we invited speakers to join in the teaching of the class providing variety and different insights. Stephanie Kelly of North Carolina A&T State University taught the class remotely and presented views on intercultural communication. Mary Ellen Guffey, a Business Communication textbook author presented views on gender neutrality and how it affects both written and spoken formats in 2014. These were very well received by Australian students, but international students could not relate to these concepts as they were just looking towards their local lecturer on campus. To encourage English as a Second/Foreign Language students, a combined class via video conferencing was organised in 2016 with the class of Associate Professor Bistra Vassileva in the University of Economics in Varda, Bulgaria. Students from both sides had English as their second or third language. Such a session was awkward for both sides and the participants were shy and fearful of making mistakes. Adjustment factors proposed by Andrade (2016) would be best put in place ahead of such sessions. These factors describe the “fit between students and the academic environment” as mentioned by Ramsay,

Barker, & Jones (1999). Learning processes such as the way in which individuals acquire knowledge and skills, which is hampered by emotions, moods, and feelings (Boekaerts, 1993). However, these time-consuming processes would not have allowed satisfactory progress to meet the learning objectives of the subject in a 12-teaching semester. In 2018, Dana Loewy, another author and specialist was invited for a question-and-answer session with the students. Questions were collected from students and forwarded ahead to the speaker. A mixed cohort of first language speakers and international students also complicated the experience. Moreover, students in regional and rural locations presented questions that were of little or no interest to international students and vice-versa. International students were more focussed on assessment, in particular the exam (Wong, 2004).

Mobile Learning

The introduction of MP3 players and the introduction of the Apple iPod in 2001 presented an opportunity that academics were dreaming of: the ability to *push* information to students during their down time such as waiting for the bus or train, travelling passively in public transport or parents waiting for their children in their cars at school dismissal time. These few minutes of *stolen* time could be used for learning. Three to five minute podcasts were produced to alleviate student anxiety in various topics as they prepared to attend university classes (Chan & Lee, 2005). The content of Business Communication was suited for such audio only podcasts as they travelled to and from the university or their places of work (Chan, Lee, & McLoughlin, 2006). Student-generated podcasts for dissemination (Lee, McLoughlin, & Chan, 2008) and advanced peer learning where students were free to share their thoughts about various learning problems and issues anonymously were produced (Lee et al., 2008). Macdonald, Chiu, & Chiu (2011) supported mobile learning content increased convenience and flexibility. In 2017, mobile learning in the subject moved from MP3 to MP4 as video was found to be the more effective means of presenting content related to business communication. Similar success was replicated and reported by many others (Moura & Carvalho, 2008; Taylor, 2010) and contributed to the efficacy of the flipped classroom (Vaughan, 2014). Certain topics such as non-verbal communication and ethics in business communication are appropriate to be taught in the flipped classroom model. The course included students presenting their work in MP4 video format beginning in 2019. This led to unexpected learning advantages which are described later in this paper.

Changing Online Learning Management System

The change in Learning Management System from Sakai-based Open Source Learning Management System (LMS) to the commercial Blackboard system in 2015 presented a number of problems for the subject. Embedded HTML resources had to be manually changed over: these included subject study notes, web links and even embedded YouTube videos. Rather than transitioning into the new LMS directly, the materials were temporarily hosted in Google Docs format. The definite move to cloud storage (McDonald, 2010; O'Mara, Meredig, & Michel, 2016) presented several advantages: the material could be accessed in a very short time frame by students rather than waiting for technical assistants to re-code material into the new LMS Content template. This also reduced as system tweaking was underway and updates were being implemented. These documents in the Google Drive platform could also be easily shared with casual lecturers and tutors who have not been issued a university login and industry experts who could not log into an LMS yet. All authorised users can view, evaluate, and advise on readings and case materials. The last example is a good reason why materials should have been hosted in the cloud without access interruption (Masud & Huang, 2012),

while the new system was being setup and the LMS was being studied and updated by the subject convenor. Teaching staff would also be able to experiment and learn the strengths and weaknesses of the new system which allowed educational material presentation in a manner that was not available on the earlier Sakai platform. This engagement was most important for the subject as for the first time, as industry professionals were invited to send in comments. This led to a number of changes in the subject: one of which was to have a floating topic system so that new issues in communications could be inserted into the subject as quickly as possible. Modules would also be stackable so that one could be taken out and taught as an independent professional development module. Good examples of these include ethics in communication, intercultural communication and research-to-write. This was also a need within the system being an online education provider with a private commercial teaching partner, educational teaching materials are required to be finalised three to four months before the actual teaching session starts.

Oral Presentation Skills Via MP4

The ability to present verbally in the Information Communication Industry has always been important in the engagement with employers and stakeholders. Campbell, Mothersbaugh, Brammer, & Taylor (2001) states that the mastery of oral presentation skills is important in professional life. Boud & Falchikov (2006) supports this by stating that oral presentation is the key competency skill for life-long learning in general and higher education. Graduate surveys with employers responded that while our Information Technology graduates were technically competent at their tasks, they did not acquire the skill of effective oral presentation in front of their peers or customers. As the larger number of our students are online students, these 'soft skills' were highlighted as important as technical skills (Andrews & Higson, 2008; Kenkel, 2011). In 2018, a trial began with a component of an assignment that required students to produce a MP4 file. A case study usually involved management requesting the participant to produce a short voice-over-PowerPoint presentation introducing or explaining a certain product or procedure to a target audience. Based on the steps presented by De Grez, Valcke, & Roozen (2009), this authentic learning activity presented an opportunity in learning that most students regarded as very useful. Students in this subject found out that they have to think and plan ahead, a skill that they picked up in this subject. Other important skills picked up in the process included not reading every word on each slide, to the provision and appropriate use of graphics and charts to convey visual meaning. This activity is reinforced in the following subject of managing customer support. International students learnt that auto-translation using Google Translate was not the best tool to prepare a slide as many words would be translated "out of context." As the lecturer was the same for both subjects, the presentation skill in almost all students improved tremendously in a space of four months, between the first and the second subject. The same result of "presentation effectiveness" as observed by Alshare & Hindi (2002) was replicated in this subject's task. The development of this skill should be encouraged and supported when millennial students are more dependent on written social media for communication among their peers (Gibson & Sodeman, 2014; Manago & Vaughn, 2015).

Contract Cheating, Use of Data Analytics and Six-Step Guidance

The subject requires students to submit research reports as assignments. In April 2019, the Australian Federal Department of Education drafted legislation that made contract cheating an offence (Panel, 2019). Universities were called to put in measures to ensure that the student assignments submitted were difficult to be contracted out to third parties. The assessable components (Harper et al., 2018; Rogerson, 2017) were taken into consideration and assessments

incorporating elements recommended by Bretag et al. (2018) were put in place over a year. Assignments were scaffolded and linked with some essential elements of work released seven days before due date. This short time frame allowed all students to work on a realistic industry time frame and narrowed the window making outsourcing to contract writers not viable to work on or present themselves with a very expensive option. Student data analytics available on Blackboard LMS were viewed (Figure 1) and analysed for any inconsistencies in student time-use of resources (Reyes, 2015). The use of the Journal tool in Blackboard was appropriate as it also allowed the instructor to provide and encourage step-by-step guidance along the way. The six-steps outlined by Hounsell, McCune, Hounsell, & Litjens (2008) was used effectively to help students in their task. In this way, the journey in the writing of the report was more important than the final presentation of the final product. More marks were awarded for the process rather than the end product. This further reduced the viability of the work being outsourced.

Student Activity by Item in the Course

Item Name And Type	Total Time Spent in Hours	Number of Times Accessed	Initial Access Date/Time
1.Site Access & Introduction Test	**0.77**	4	7 Mar 2019 3:52 pm
2.Report Preparation Journals	**1.84**	19	21 Mar 2019 5:25 pm
3.Structured Report Journals	**0.65**	10	29 Mar 2019 8:43 am
4.Ethical & Non-Verbal Comm Journals	**1.65**	7	4 May 2019 10:12 am
Assignment 1 due 14 Mar Content Folder	**0.02**	7	6 Mar 2019 3:35 pm
Assignment 2 due 27 Mar Content Folder	**0.41**	29	21 Mar 2019 5:25 pm
Assignment 3 due 10 Apr Content Folder	**0.50**	12	22 Mar 2019 12:23 pm
Assignment 4 due 13 May Content Folder	**1.36**	12	4 May 2019 10:12 am

Figure 1. A sample of data analytics showing a student accesses in developing an assignment.

Future Work: Plug-and-Play Modules for Different Learning Styles

Popular subjects are taught up to three times a year in the current university trimester system and new assignment materials have to be generated each session. One good example is supporting different learner styles. In 2018, the audience of this subject catered to approximately 45% first language speakers and 55% non-English speaking background (NESB) students. However, their pattern of enrolment varies with more NESB students enrolled in the second and third sessions. Some very interesting information about user attention spans, their interactivity (Figure 2) and capturing of search keywords by viewers were collected in an experiment with Videohop (Australia), a commercial product that auto-subtitles a video-over-PowerPoint presentation, auto-indexes for a search and also generates chapters automatically. This software allows the owner to gather other useful information such as interactivity averages and the number of downloads and views. Initial

reviews showed that the NESB cohort did not view videos longer than 15 minutes. Search keywords were also captured as this highlighted the students' interest in reviewing these sections. There is also a planned future study into how videos could be produced in parts that meet the search criteria of viewers. Hopefully, this will encourage greater and more rewarding student interaction and provide a more appropriate learning experience that caters to individual learning preferences.

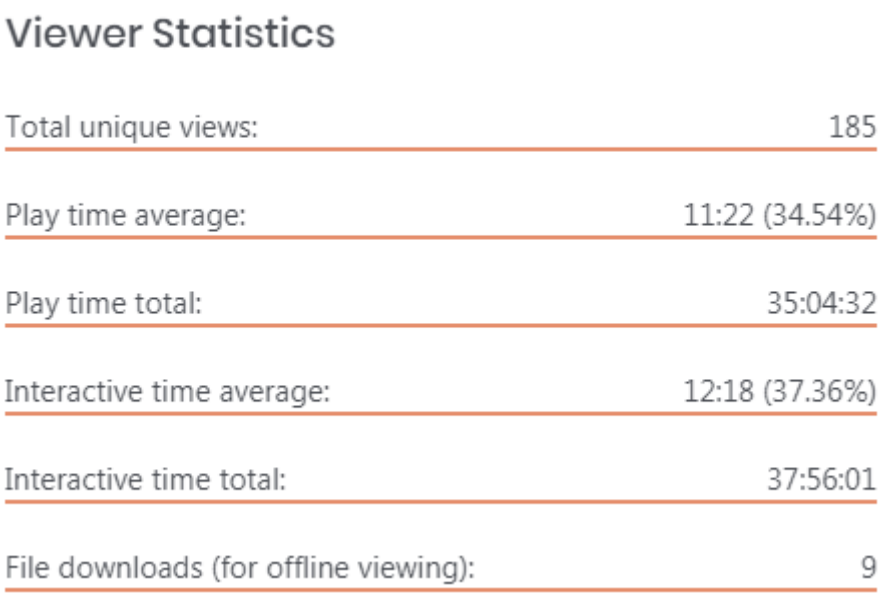


Figure 2. Useful viewer statistics from Videohop portal.

With Australia's uptake of the National Broadband Network, the company rolling out the nationwide infrastructure reported that 5.2 million homes and business are connected compared to 3.8 million in April 2018. The same report also mentions that 9.2 million homes and businesses are able to connect compared to 6.6 million in April 2018 (NBN, 2019). This indicates that future development of the subject could move toward streaming delivery of selected educational materials for the subject, catering to different groups of learners. The subject has also been collecting statistics on electronic book (eBook) uptake by students of this subject. At the present moment, the fifth year of data collection is in progress. With reading and viewing material data, resources can be better positioned into the development of a multi-faceted approach that engages with the selected experience desired by the learner.

Conclusion

The number of initiatives carried out in the last fifteen years of this subject has brought about a subject that could be adapted very quickly to change with learning management systems. At times, this demand comes through feedback from potential employers and the community. The current subject is also able to address oral presentation deficiencies (especially for online students) and offers a subject with oral presentation capabilities in an authentic learning environment. The use and analysis of data analytics tools have provided a positive pathway into reducing the possibility of the written assignment being outsourced to contract cheating organisations. The subject has been positioned to offer more variety in learning styles when higher broadband services becomes available. The use of the new software tool, Videohop has opened up an avenue to understand

student video viewing patterns and logged search words will be the way forward to provide increased positive learning experiences.

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Visual Persuasion: Presentations in the Era of Big Data

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Abstract

Contemporary public address has entered an era of visual rhetoric, and the technologies of Big Data are expanding and exacerbating the emerging norms of data-driven evidence, visual impact, and interactive delivery. Business might drive the adoption of data visualization, visual analytics, and interactive decision making, but the effects drive rhetorical change. This analysis of a BBC speech by the late Professor Hans Rosling explores these emerging persuasive techniques to illustrate broader implications for emerging norms of *logos*, *pathos*, and *ethos* in contemporary discourse.

Technological advances have brought the business community into an era of Big Data, which influences far more than just data-driven decision-making processes. Communication practices, especially in strategic and persuasive decision-making contexts, necessarily reflect emerging presumptions of what constitutes effective decision making (McLuhan, 1964). The rhetorical norms of any community evolve to accommodate changing social mores, epistemological assumptions, and communication technologies (Cyphert, 2001a), and the history of rhetorical change can be understood as a history of changing communication media (Gronbeck, Farrell, & Soukup, 1991; Innis, 1951; McLuhan, 1964).

In the twentieth century, exploding technological advances began to challenge the normal pace of rhetorical change. Theorists once described rhetorical eras (Ehninger, 1968) that evolved across a history of human perspective (Black, 1980). Then came media, computers, and the internet. We had not yet developed robust norms to discipline televised political discourse (DeLuca & Peeples, 2002; Gronbeck et al., 1991; Jamieson, 1998; McLuhan, 1964; Postman, 1985) or antidotes to computer-generated graphics (Jarvenpaa & Dickson, 1988; Tufte, 1997; Vogel, Dickson, & Lehman, 1986; Winsor, 1988), when we found ourselves immersed in the even more problematic sphere of blogs, social media, and Twitter (Johnson, 2012; Ott, 2016; Pariser, 2012; Slayden & Whilock, 1999). Now, without so much as a decade of breathing space, another challenge already lurks on the horizon: Big Data[1].

[1] The "big" in Big Data variously describes the vast amounts of data being generated and collected, the exploding capacity of computing power that allows its analysis, and the point at which human cognition must relate differently to information (Ekbia et al., 2014, p. 1524). Rhetorical scholars address the third aspect, but within this cognitive domain, size does not properly describe the most important characteristic, which involves the amount of the data being analyzed relative to the totality of data available (Mayer-Schönberger & Cukier, 2013). Advances in computing power allow the manipulation of such massive datasets that analysis can now encompass *all* the data without the filtering, segregation, or biases inherent in selecting suitable samples for study. As Rob Kitchin puts it, Big means "n=all" (2013), making obsolete the deductive approach developed "under conditions of scarce data and weak computation" (Kitchin, 2014, p. 6). Rather than focusing on representative data to create a general but necessarily approximate theory, science can now examine every data point in relation to every other data point. In pragmatic terms, science now has tools to cope with variation, contradiction, anomalies, and outliers (Mayer-Schönberger & Cukier, 2013) within dynamically changing complex systems (Chandler, 2015).

We have recognized the immediacy of visual media (Jamieson, 1998), the graphical dominance of PowerPoint (Tufte, 2003), and the infinite circulation of social media (Kedrowicz & Taylor, 2016), but we are just beginning to appreciate the degree to which Big Data exponentially exacerbates the turn from verbal rhetoric toward visual norms of effective presentation (Cyphert, 2017, 2018; Gregg, 2015).

Digital media scholars have been among the first to address the rhetorical, cultural, and social challenges of Big Data (boyd & Crawford, 2012; Fuchs, 2017; Gitelman, 2013; Lupton, 2015, p. 94), focusing their attention on social media's impact on economic equity, individual privacy, and democratic discourse. The surreptitious capture of data from unsuspecting and nonconsensual users raises legitimate legal and ethical concerns (boyd & Crawford, 2012; Crawford, Miltner & Gray, 2014; Ekbia et al,, 2014; Fuchs, 2010; Fuchs, 2017; Gregg, 2015), but we have amassed even bigger data sets from less problematic sources—astronomical data, particle accelerators, genome sequencing labs, governments, and NGOs. In these realms, we might better examine the rhetorical impact of Big Data separately from contemporary socio-economic-political issues.

The extensive business use of Big Data has influenced analysis. Corporate entities are presumed evil by some academics, distrusted for their capitalist motivation (Fuchs, 2017) or because they monopolize data resources (Richards & King, 2013). To others, corporate efforts to develop and market Big Data tools signal a "cultural phenomenon" that arises from a technologically utopian "mythology" promoted with marketing communication but lacking in substance (boyd & Crawford, 2012, p. 663). Regardless of the tendency to equate Big Data with business interests, persuasive uses of Big Data can be found well beyond corporate contexts. For a more neutral perspective, we thus might we might thus look outside the contested spaces of social media and corporate domination to discern the rhetorically universal issues of epistemology, aesthetics, and performance that Big Data seems to raise.

In the realm of public health data, for instance, neither personal privacy nor corporate gain spark criticism. Further, the late Hans Rosling, a distinguished Swedish professor of international health, was widely praised as one who had mastered the presentational use of Big Data. This project examines one of his best-known presentations (Coleman, 2015; Gapminder, 2015) to examine emerging revisions in *logos*, *ethos*, and *pathos* across our data-soaked rhetorical era.

Rhetorical Attention to Big Data

Rhetorical attention to the Big Data phenomenon, especially in the context of technical and professional communication, builds on already extensive scholarship in data visualization (Kostelnick, 2008; Kostelnick & Hassett, 2003; Spinuzzi, 2003; Tufte, 1983). An initial presumption has been that while graphical displays of information are increasingly common, with importance for both research and instruction (Kostelnick, 2008; Salvo, 2012; Toth, 2013), Big Data technologies simply expand the options for clear, effective delivery of numeric messages (Bodie, n.d.; Brumberger, 2015; Cyphert, 2017; Sorapure, 2010).

Rhetorical treatments of Big Data graphics thus cluster in three areas already identified as key characteristics of visual rhetoric: *inventional potential*, *aesthetic impact*, and *dynamic connectivity*. Visual rhetoric scholars have developed these principles from examination of technologically produced images (e.g. photography, film, graphic design), but as contemporary discourse increasingly reflects the visually dynamic, technologically-enhanced engagement found in mediated venues, we find all forms of public address adapting to and adopting the rhetorical norms of visual display.

Visual challenges to traditional epistemology, social mores, and public performance—the cool immediacy of televised speechmaking (Jamieson, 1998; McLuhan, 1964), the compelling imagery of PowerPoint (Cyphert, 2001b; Shwom & Keller, 2003; Tufte, 2003), and the infinite circulation of TED Talks (Kedrowicz & Taylor, 2016)—seem extended and exacerbated with the ubiquitous adoption of data visualization software ("The success story of Tableau software," 2017). Big Data seems to challenge any lingering presumptions that visual rhetorics represent an auxiliary or inferior form of public discourse. This examination of one exemplar further illustrates both the performative character of contemporary public address and the rhetorical evolution that appears to drive contemporary expectations. One examination cannot yield a definitive answer, but this examination offers a step toward understanding this century's emerging rhetorical norms as an ongoing rehabilitation of visual bases for cognition, persuasion, and credibility.

Big Data visualizations might be ubiquitous on corporate dashboards or in policy analyses, but are less so in oral performance. We have begun to examine Big Data influences on graphical communication (Bodie, n.d.; Cyphert, 2017; Jones, 2014; Porter, 2009), but we are just beginning to appreciate the degree to which Big Data further challenges rhetorical norms of effective persuasion more generally.

Hans Rosling: A Contemporary Presentation

The late Hans Rosling, a distinguished Swedish professor of international health, was widely praised as one who had mastered the presentational use of Big Data (McVeigh, 2017), still a technically challenging and time-consuming process (McCandless, 2010). His BBC broadcast "Don't Panic - How to End Poverty in 15 Years (Coleman, 2015) was delivered before a live audience just two days before representatives from 193 countries would gather at the United Nations to consider what appeared to many as a misguided program to end extreme poverty worldwide by 2030 (Division for Sustainable Development, 2015). By all accounts, Rosling was successful in demonstrating the feasibility of the U.N. proposal, which was adopted two months later, and Rosling's appeals demonstrate the degree to which classical arguments were augmented and arguably changed by a reliance on the proofs afforded by data visualization.

This analysis demonstrates that Big Data challenges the presumptions of what we have come to understand as reasoned public address. Rosling seems to bypass traditional tools designed to carefully examine and draw logical conclusions from just a few data points, demonstrating a *logos* of visual evidence. He relies on aesthetic impact to tap the implicit responses of *pathos*, which we have traditionally avoided for its potential to overwhelm an audience's critical capacity. He makes no traditional appeals to an *ethos* of credible authorship, instead inviting his audience to share in the co-creation of persuasive meaning.

Let the Data Persuade: Challenges to Logocentric Reason

The rhetorical role of the visual has been contested since ancient times (Finnegan, 2004) when appeals to the "emotional, psychological, and physiological" were declared subsidiary to the rational appeals of verbal argument (Kenney, 2002, p. 54). Even with the recognition of visuals as a legitimate topic of rhetorical study (Foss, 2004), most framed them as tools of memory and delivery (Medhurst & DeSousa, 1981) or stylistic devices (McQuarrie & Mick, 1996). Even those arguing that visual displays can communicate claims, evidence, and arguments classified the appeals as *pathos* or *ethos* (Blair, 2004) with their evocative work functioning separately from the "verbal discourse, debate, argument, and thoughtful reflection" (Hill & Helmers, 2004, p. 3) of critical discourse. There might be persuasive effects from the

ordering and framing of images (Lake & Pickering, 1998; Lancioni, 1996), but such arguments were deemed merely enthymematic, susceptible to ambiguity, limited to just one or two simple premises, and lacking any dialectic capacity (Blair, 2004).

Despite a scholarly attention to the persuasive power of visual rhetoric, presumptions of verbal reasoning dominate our understanding of how it persuades. As Finnegan and Kang (2004) have argued, "images and vision often are interpreted through a logic of subtle iconoclasm that makes visuality subservient to dominant linguistic/rational norms" (p. 396). We find no explicit claims, no complete logic chains, and no verbalized explanations of support and so we conclude that we have found no appeals to *logos*.

The visual analytics of Big Data pose new and potentially more serious challenges to the historically logocentric presumptions of reason. Chris Anderson (2008), editor of *Wired* magazine, prompted a firestorm of protest when he proclaimed the end of theory, describing Google's predictive success as evidence that the scientific method is obsolete. With enough data and processing power, the diagnostic tools of science—building models, developing hypotheses, and testing theories—no longer provide value; now "correlation is enough," to create knowledge (¶13). Critics responded that reliance on Big Data thus demolished "instrumental reason" (Fuchs, 2017, p. 54) by replacing public discourse with decision algorithms. Concerns include fear that machines might override human decisions (Kitchin, 2014) as well as distress that machine users can bypass the "older forms of intellectual craft" (boyd & Crawford, 2012, p. 666) and put civilization at risk by creating policy independently of the "regulating force of philosophy" (Berry, 2011 p. 8).

The most telling concern lies in Big Data's substitution of theories, hypotheses, and statistically validated results with visual displays of data patterns and relationships that an audience can immediately, without conscious effort, interpret as meaningful. Data with bits numbering in the quadrillions cannot be "visualized in its totality" (Anderson, 2008), but computational tools create perceptually meaningful shapes and patterns. Big Data visualization tools move us across an analytical threshold we have seen coming since quantum theorists re-opened ancient debates about the relationship between "data—what the world presents to us through our senses and instruments" and "knowledge of the world—how we understand and interpret what we get" (Ekbia et al., 2014 p. 1528). Big Data is part of an historical trend shifting "success criterion in science from causal explanations to predictive modeling and simulation" (Ekbia et al, 2014 p. 1530).

Hans Rosling creates arguments consisting entirely of data display, illustrating a *logos* of unmediated visual comprehension (timestamps shown from Gapminder Foundation, 2015). Rosling offers no verbal arguments in the classical style of claim-warrant-conclusion. Instead, he displays data: economic, demographic, health, crime, and environmental data gathered from the world's 196 nations since 1800 (Gapminder Foundation, n.d. a), millions of data points, sliced and diced in any conceivable way. Rosling introduces his topic with the counterargument that extreme poverty is intractable and counters, "I think that view of our world is wrong" (1:01) simply by displaying his data. Fully embracing a responsibility to *logos*, he proclaims, "I'm a scientist; I deal in facts" (1:07) and enfolds his evidence in a credibility claim, promising that his persuasive task will be "easy" because he can work "from my huge database" (0:38).

Rosling expects his audience to perceive data as evidence, confident that his audience has already accepted the normative rules of data-driven decision making. His first argument, that current trends demonstrate the possibility of ending extreme poverty, is entirely numeric. Rosling demonstrates his points as quantities and percentages of world population. His claims do not provide any explanatory theory or the claim-warrant structure we traditionally anticipate. Instead, he argues his points just by

demonstrating patterns, variation, and individual experience to prove the material possibility of escaping extreme poverty.

Rosling's visual claim that social spending comes before economic growth similarly lacks any verbal explanation for the mechanism of change. He shows us that smaller families correlate with larger incomes using national bubbles swooping across two centuries of child mortality and GDP per capita (39:46), but when it comes to deciding "which came first" (46:53), a conclusion is not drawn from a theory of cause and effect. Instead, Rosling visually demonstrates the trajectories of the UK, China, South Korea, and Ethiopia to demonstrate "the smart shortcut" to economic growth in terms of pattern match (45:15). Rosling relies on the data as a visual message of both claim and support.

We have long understood data as units of information "waiting to be found and collected by scholars and other analysts" (Helles & Jensen, 2013), and our theories of *logos* describe the explicit reasoning processes we can use to mitigate the difficult process of uncovering hidden information. We deduce, predict, and reason from limited evidence, and our tests of evidence include attention to the credibility of collectors or observers of data. Rosling, able to display the entire dataset of public health facts, needs no deductive crutches. The audience has no need for scholars or scientists to collect and interpret the facts; Rosling simply displays them in all their naked, empirical glory.

Rosling's performance also demonstrates forms of reasoning made possible with the analysis of an entire dataset. The ability to drill down to specific data points, coupled with the computing power to examine every relationship among them, allows Rosling to create claims of individuality based on segmentation of differences instead of claims of generalizability from statistical aggregations. To "define" poverty, Rosling explains that "everyone has their own idea" (5:03) and shows eight video clips of individuals around the world saying, "I'm poor," followed by explanations that range from "We eat only once a day" to "We don't know if we can go to university" (5:11). To clarify, he creates a "yardstick of income" (5:42) along which he demonstrates both variety of experience and variety within nations. Demonstrating the Swedish calculation of national GDP and poverty (6:58 – 7:55), he graphically demonstrates the importance of *differences* across nations.

A more meaningful way to look at poverty, Rosling claims, involves knowledge of individual families' daily struggles to find enough food to stay alive. With video and photos of specific families in Malawi, Burundi, India, Zimbabwe, Nigeria, and Papua New Guinea, Rosling answers his rhetorical question, "What does that mean to them, day to day?" (8:49). Comparing pictures of the real houses of real people, he proclaims, "I can really understand that they want to build a new house" (16:25). Rosling's Gapminder foundation, he explains, sponsors the Dollar Street project (n.d. b), a visualization tool designed to "show the difference in living situations" (16:34), with thousands of details about specific households across income levels across nations. A spinning graphic of utensils and tools emphasizes the myriad data points included. In the end, Rosling's visual compilation of unique, individual lives creates a claim that the hard life at $1 income per day warrants agreement on the "importance of the United Nations goal 1.1" (19:23).

Computational power allows more than just gathering petabyte sized arrays of Big Data. We can draw "the whole picture" by representing how each unique point is connected to every other data point (McCandless, 2010, p. 12:10). The ability to see all the unique relationships as a network among multiple data points allows attention to difference. Without any need to extrapolate "from limited or selected data on the basis of rules or regularities"; users of Big Data can contextualize "the individual case. . . promising personalized or individualized" policy, service, or regulatory results (Chandler, 2015, p. 486). No piece of

data need be excluded or rejected because a theory fails to consider it relevant or because it is different from the aggregated average or norm (Chandler, 2015).

We can see this *logos* of individual cases demonstrated in Rosling's talk. Whenever explanation becomes necessary, Rosling turns to individual cases: "What we have to do is look at those who recently came from extreme poverty and into the middle to learn, what does it take to go from here to there?" (27:58). Eleven minutes of documentary footage shows a Cambodian family's living conditions, economic fragility, and response to a medical emergency to demonstrate the impact of free medical care: without it the family might have quickly returned to extreme poverty. Rosling buttresses their story by introducing other families, from the Philippines, Rwanda, Colombia, and Bangladesh, to find a pattern: on this first step above extreme poverty, all have "electricity, electricity, electricity, electricity" (34:41). One story of building a dam in Malawi serves as the example, the unique but possible path. Rosling's story, inherently optimistic, concludes with a call for creative, innovative, inexpensive but locally tailored steps to end extreme poverty worldwide.

Big Data challenges the purpose of what we have come to understand as reasoned public address. With the availability of data, we seem able to bypass any need for the tools to carefully examine and draw logical conclusions from just a few data points. We have not, however, escaped the need to respond intelligently to a display of facts. Microsoft's Kate Crawford coined the phrase, "data fundamentalism," to describe the fallacy of believing that massive data sets or predictive analytics necessarily reveal "objective truth" (Crawford, 2013). Some traditional tests of evidence no longer apply; sample validity, for example, has no relevance when the entire population can be examined. On the other hand, assurances that complete and relevant data have been collected or that data labels have been consistently applied now become important questions. We no longer need to dismiss personal narratives or single examples because they cannot be generalized, but now we require forms of reasoning that locate their proper role in public decision making. We are not starting from scratch, but work needs to be done to develop an understanding of *logos* that is appropriate for Big Data.

Aesthetic Inducements: Tapping the Warrants of Social Being

Much critique of Big Data concerns its output as algorithm-generated graphic display, with considerable debate surrounding the ways in which humans apprehend or interpret visually presented data (Ekbia et al, 2014). Big Data tools, often admired for awesome aesthetics that facilitate an audience's swift comprehension of complex relationships, also raise concern that awesomeness short circuits rational thought (Bodie, n.d.; Gregg, 2015). The visceral reaction of aesthetic pleasure echoes emotional responses to ecstatic dance, sexual activity, or mind-altering drugs, long ago excluded from appropriate civic discourse. Plato sought to protect the value of explicit reasoning, banning the poets so their intuitive, implicit inducements could no longer contaminate public discourse (Havelock, 1968). Rhetorical theory acknowledges the inducements of *pathos*, but as a horse to be controlled with significant effort in order to reach wisdom. Others worry that Big Data exceeds the capacity of a single human mind to apprehend, thus requiring computers or people to cooperatively mediate the data through trans-disciplinary layers "of selection, ordering, interpretation, and distribution/access" (Ekbia et al., 2014, p. 1527), a requirement that visual data display necessarily "renders the accuracy of the claims problematic" (Ekbia et al., 2014, p. 1532).

Audiences have been taking aesthetic pleasure in Rosling's data displays since his TED Talk debut in 2006, titled simply, "You've never seen data presented like this," and nearly 12 million viewers have watched the

"statistics guru" talk about economic conditions "with the drama and urgency of a sportscaster" (TED Conferences, n.d.). What, except great aesthetic value, could possibly motivate millions of people to watch a 20-minute speech on economic statistics? Rosling's equally compelling BBC performance (Coleman, 2015) illustrates the tight link between the analysis of Big Data and its attractive display.

Rosling's displays meet design expectations for clarity, simplicity, and beauty, and a few are decidedly low tech. With Rosling's "giant poverty tracker" (19:34) he uses "his bare hands" to build a graph from giant boards and pegs. Rosling utilizes contrast—a tried and true design trope—along with entertaining delivery and a bit of humor to maintain his audiences' interest. As he animates regional income distribution percentages across the past two-hundred years, for instance, he physically follows the changes shown on colorful and enormous mountain graphs. The speaker becomes the aid to the visual, gesturing toward colorfully morphing hills as he verbally explains the changes: the industrial revolution, World Wars. Bright colors, clean design, and simple presentation suggest that the data itself must be equally simple, straightforward, and utterly convincing.

As Rosling builds his graph, he chats about each of the percentage points, but never explicitly explains their representation of world poverty. A contemporary audience can be trusted to read a trend line and consider the validity of its scope, and Rosling acknowledges that "some of you have already spotted" (23:46) a fallacy in using population percentages without considering population growth. A minimalist graph, built of glowing blue and red lines floating on an invisible, grid-free plane in front of Rosling, convinces his audience through their own intuitive grasp of an ever-steeper negative slope. Rosling trusts his audience to conclude with him that "it is indeed possible to continue down to zero" (25:53). Rosling's performance is captivatingly convincing but demonstrates the Big Data critics' central concern: audiences' willingness to uncritically trust their own implicit cognitive processes might be exacerbated by design aesthetics that lead to over-simplification, distortion, and erroneous conclusions (Ekbia et al., 2014; Viégas & Wattenberg, 2007).

Hans Rosling's enthusiastic storytelling drives this BBC performance, and his statistical presentations benefit from his performative delivery. He engages in literal hand waving, seeming to guide the bubbles of national GDP across the screen of time. Yet Rosling's words merely explain the color codes, time scales, and implications of his massive, dynamic visual displays. The wait-for-it moments lie in the dynamic displays of data, which offer evidence along with the entertainment factor so crucial in a "fast-surfing" digital era (Kedrowicz & Taylor, 2016, p. 356). The proportion of textual and visual content in Rosling's arguments illustrates the potential impact of Big Data. Without visuals, the text is cryptic (Rosling, n.d). Furthermore, the data displays do not function as illustrations or proofs in support of verbal claims.

We have been taught to condemn the demagogue who exploits the intuitive, uncontrollable responses of a crowd's passion. Over millennia, philosophers have developed theories of moral wisdom, promoted habits of life and mind to control or avoid emotional response, and steadfastly framed reasoning as explicit cognition within the individual mind. Our understanding of rhetoric as explicit, verbal inducement to consciously believe and mindfully choose respects those ancient cognitive boundaries. Only within the last century have we had to grapple with the quantum collapse of certain reality (Kline, 1980; Prigogine, 1997) and complexity (Capra, 1997; Wolfram, 2002), along with neurobiological understanding of implicit reasoning (Reber, 1993; Sun, 2001), social cognition (Cole, 1996; Surowiecki, 2004), and collective learning (Hayes & Allinson, 1998; Senge, 1994).

Theorists in visual rhetoric have addressed these developments, recognizing the fallacy of a simple distinction between the rational and the emotional (Hill, 2004), along with the inventional potential of

aesthetic rhetoric to locate and establish truth within a responding audience (Reeves & Stoneman, 2014). The inevitable sharing of digital images has led, as well, to a recognition that primary rhetorical processes involve the social circulation of meaning, in stark contrast with the traditional focus on a persuasive transmission of meaning from rhetor to audience (Finnegan & Kang, 2004).

Visual displays of information never involved neutral presentations of raw data (Gitelman, 2013; Kostelnick, 2004), but have nevertheless been framed as tools to achieve clear, accurate, instrumental communication. Illustration and graphic design have traditionally been constrained, careful not to put creative aesthetics ahead of explicit meaning (Kostelnick & Hassett, 2003; Tufte, 1983) and serving as tools of delivery rather than invention (Cyphert, 2018). Rosling's performance demonstrates the potential for an audience's visual perception of patterns and relationships to induce their implicit understanding of otherwise unsaid—and perhaps unsayable—claims about the world. Data visualization tools exploit the implicit cognitive processes of physiological and emotional response, and a contemporary understanding of *pathos* appeals must include the persuasive inducements of aesthetic performance.

Networks of Performance: Ethical Proof in the Circulation of Meaning

The media age called forth new methods in public address, although some trace the contemporary rehabilitation of delivery to Winans' and Hudson's reminder that "a speech is not merely an essay standing on its hind legs" (1931, p. 17). By the 1960s, television had transformed political oratory into conversational self-disclosure, visuality, and verbal distillation discourse (Haynes, 1988, 1989, 1990; Jamieson, 1998). Contemporary audiences now engage with political, civic, and business speakers by way of YouTube and TED Talks, expecting to be engaged with enthusiasm, storytelling, visuals, and connection (Kedrowicz & Taylor, 2016). Today's typical venue features a live audience and a huge screen behind the speaker. As the interactive tools of Big Data make their way onto the desktops of business executives, politicians, and lobbyists, those screens increasingly feature similarly dynamic, interactive displays of data.

Scholars of written rhetoric have recognized the need to re-theorize delivery to account for the range of technological choices now available for both composition and circulation of a digital message (Porter, 2009), as have theorists of visual rhetoric who focus on the mediation, re-presentation, and co-creation of meaning made possible by the circulation of images across digital media (Finnegan & Kang, 2004). The multiplicity of networked transmission expands the audience but necessarily introduces ambiguities (Sayers, 2012), and the design of interactive online communication remains an ongoing area of research within technical communication (Stephens, DeLorme, & Hagan, 2015).

Thus far, nearly all critique of Big Data has focused on written texts, but Rosling's energetic, data-focused delivery clearly produces an effect on his digitally dispersed audience. Here, the emerging norms of oral delivery suggest potential shifts in the traditional conceptualization of ethos. Competence, sincerity, and affinity remain workable categories, but the expectation of enthusiastic storytelling seems to shift their priority for effective public address. Outside of referring to himself vaguely as a "scientist" (1:07) and later as a "professor" (6:00), Rosling verbally offers no credentials. Nor does he mention the sources of his data. Yet Rosling's visuals represent an important contribution to his *ethos*. All those numbers, dancing colorfully across holographic space, radiate competence. Perhaps because graphical data displays remain the province of scientific and technical disciplines, they convey credibility.

The presentation had been planned from the start as a television documentary, but like TED Talks and political campaign speeches, the presence of a live studio audience adds a crucial element of audience

interaction. Rosling directs his energy toward engaging, entertaining, and educating the live audience at the BBC production studio. His highly interactive performance includes an audience quiz, complete with quiz-show graphics (2:44). Data journalist David McCandless describes data visualization as "a form of knowledge compression… a way of squeezing an enormous amount of information and understanding into a small space" (2010, 13:49), which can be observed as Rosling collapses verbal cues of competence into a visual display of *ethos*: No credentials, no citations, no proclamations of credibility—just big, bright, beautiful, convincing data.

At the same time, Rosling's performance does not exist as a single event before a single audience. The individuals in the BBC studio knew they would themselves be part of the broadcast, and while they looked and acted like an audience, they functioned as another proof of Rosling's *ethos* rather than as authentic auditors of his claims. The performance was then broadcast on the BBC Two channel on three different occasions, two of which occurred *after* the United Nations vote that defined Rosling's rhetorical context. Multiple short clips of the speech have appeared both on the BBC website and YouTube, and Gapminder hosts a copy of the performance along with its sources, access to his databases, and free use of the Gapminder tools that generated his visuals.

Electronic media, especially internet communication, have dramatically changed the nature of the public that speakers must address. While enthusiastic interaction with a live audience offers important visual cues, the audience includes "a broader audience of people both in real time, through live-streaming video, and after the fact" (Kedrowicz & Taylor, 2016, p. 370). James Porter (2009) argues for a theoretical framework of digital delivery that includes elements of accessibility, distribution, and ownership as well as attention to digitally created identity and interaction. The digital traces of Rosling's original performance can be paused and rewound, watched without sound, sampled, and shared. Unlike transcripts or even videotapes of speeches, these digital echoes become unique instances of address to multiple unique publics. The speaker in the digital data era addresses both a face-to-face audience and virtual audiences whose responses "demonstrate their co-ownership of a presentation" (Kedrowicz & Taylor, 2016, p. 369).

Mediated interactivity had become a characteristic of contemporary public address before the advent of Big Data, but Rosling's performance illustrates its potential for pushing that envelope. Big Data introduces the genre of the dashboard (Geckoboard, n.d.), an increasingly popular display tool that allows users to "co-create" understanding (Kim & DiSalvo, 2010) by exploring and manipulating data for themselves. Obviously, a live audience member cannot touch Rosling to drill down on a data point, but he anticipates and fulfills that urge, zooming in on a graph (41:01) or illustrating a country's dot with video of a single family (41:41). Not every speaker can invite audience members to play with the data on their own at a website dashboard (Gapminder Foundation, n.d. c), but contemporary professional and political speakers increasingly recognize the critical role of an interactive Q&A (Neher & Heidewald, 2015) or town hall venue. Big Data expands the tools of *kairos,* offering an audience the means to find "just what she needs—the information, the pattern, or the anomaly—at that moment she needs it" (Bodie, n.d., p. 9).

Visual Inducements of Big Data

The rhetorical effectiveness of Big Data does not come about because its visualization creates arguments in the same way that words do, or fosters better verbal discussion, or mimics the dialogic ideal of public discourse. The evidence from Rosling's rhetoric seems to show quite the opposite. Implicit, visual pattern recognition offers a second path of reasoning, and visual display can locate and demonstrate relationships and concepts that cannot be expressed with words. The dynamic, interactive, manipulation of visualized

data explodes the idealistic public conversation into myriad kairotic moments. We need not abandon our ancient canons, but we must recognize that they evolve as rhetorical presumptions and conditions evolve.

With each rhetorical incarnation, a community adjusts to internal or external pressures. New communication technologies pose a triple threat in their potential to simultaneously challenge the norms of social access, epistemology, and the performance of public discourse (Cyphert, 2010). Critics have condemned Big Data as a challenge to discourse; Hans Rosling demonstrates the ways in which public address might embrace its potential. These appear to be commensurate challenges, and our task as communication scholars must include understanding rhetorical change. In the end, we might determine Rosling's demonstration of data to have been incomplete or inadequate reasoning. We might judge the intuitive response to aesthetic elements to be unacceptable emotional responses. We might reject any obligation to consider the mediated dissemination of public address. We cannot, however, refuse to consider the performance as rhetorically effective. Media, over close to a century, now reinforced with technologically produced and disseminated data display, offers new ways for speakers and audiences to negotiate meaning and evolving norms of *logos*, *pathos*, and *ethos*.

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Multifaceted Effects of Language, Culture, and Organizational Support on Asian Expatriate Cross-Cultural Adjustments

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Abstract

This study explores interrelationships among three constructs (language, culture, and organizational support) and their consequent associations with expatriates' adjustments to overseas assignments. The study builds on and extends prior research in two ways: (a) identifying the relative and interactive influence of the three constructs and (b) examining whether these constructs apply to Asian expatriates. Three hundred and thirty-one expatriates from five Asian countries answered the online questionnaires. A multivariate analysis of variance (MNOVA) test, a post hoc test, and Pearson's Correlation Coefficients were employed to examine differences and relationships. The results of the MANOVA test reveal significant differences among the five groups. Post hoc tests further examined the between-group differences and the results show significant differences between the Japanese and the other four groups in all aspects of language proficiency, cultural competence, and organizational support. Moreover, the Pearson's Correlation Coefficients indicate both language proficiency and organizational support correlate strongly with expatriates' overseas work adjustments, while cultural competence correlates only weakly.

Introduction

Expatriate adjustment theory (Aycan, 1997; Black, 1988; Feldman & Thomas, 1992) has determined and described expatriate adjustment to a host country as a multifaceted process (Peltokorpi, 2007, 2008, 2010). Past research on expatriate adjustment has focused primarily on examining the relationships between expatriate adjustments and the identified predictors, such as language, culture, or organizational support. Language and culture are two important lenses through which to view expatriate adaptation to new cultures. Of factors that are likely to affect expatriate adjustment, culture received the most attention. Much of this research has confirmed that culture has an intervening influence on message encoding and decoding between interlocutors. Cultural theorists suggest that a shared common language or lingua franca may not guarantee error-free understanding of mutual communication because cultural values manifest through communication styles and tend to act as barriers when decoding explicit and implicit messages (Henderson, 2005). While the past three decades of research on expatriate adjustment have led to thorough and insightful theories regarding the impact of culture and intercultural competence on Western-focused expatriate adjustment, little research has specifically examined issues of the adjustment for Asian expatriates (see Du-Babcock & Xu, 2011; Xu & Du-Babcock, 2012).

Emerging literature has addressed the importance of language in expatriate adjustment. The separation of language from culture has enabled researchers to demonstrate the strong, consistent influence of language on a wide range of issues in MNCs, such as intercultural communication (Peltokorpi, 2007), social identity (Lauring, 2008), and power and language policy decisions (Tanaka, 2008; Vaara, Tienari, Piekkari, & Säntti, 2005; Louhiala-Sahuinen, Charles, & Kankaanranta, 2005). Although the importance of language

has been acknowledged in intercultural business communication (see, for example, Babcock & Du-Babcock, 2001; Du-Babcock & Babcock, 1996, 2007a; Du-Babcock, 2007b), it has been "weakly integrated in intercultural business communication" and cross-cultural competence literature (Peltokorpi, 2010, p. 178).

Among three variables identified as determining factors that are likely to affect expatriate adjustments (language, culture, and organizational support), organizational support received relatively little attention from researchers until a decade ago. Early research examining the effects of organizational support has focused primarily on cross-cultural adjustment and training (Aycan, 1997; Black & Mendenhall, 1990; Caligiuri, Phillips, Lazarova, & Bürgi, 2001), social support from host country employees (Shaffer, Harrison, & Gilley, 1999), and logistical support from multinationals (Aycan, 1997; Black & Gregersen, 1991). Studies by Takeuchi, Wang, Marinova, and Yao (2009) and by van der Heijden, van Engen and Paauwe (2009) stress the effects of perceived organizational support (POS) on expatriate performance by suggesting that this aspect remains relatively under-researched within the cross-cultural context and that the findings are inconclusive. Although research on perceived organizational support (POS) has laid a foundation for highlighting its importance in facilitating expatriate adjustment, little research has examined the POS effect from a communication perspective. To fill this research gap, the present study examines how organizational support from headquarters and host country national (HCN) personnel facilitates overseas adjustment of Asian expatriates.

The term of *organizational support* in the present study defines from three aspects consisting of: (1) institutionalizing a language policy for English as a corporate language, (2) corporate language and cross-cultural training, and (3) information communication technology (ICT) that enhances the communication with headquarters (HQ) and between subsidiary companies. Feely and Harzing (2003) suggest that language barriers trigger negative consequences to foreign market expansion, the headquarters-subsidiary relationship, and staffing policies. Therefore, to enhance the communication and coordination of multinational corporations, systematic efforts need to be made to deal with the complexity of language problems, such as adopting a corporate language, and providing language training (Andersen & Rasmussen, 2004; Marschan-Piekkari et al., 1999).

The importance of corporate training before and/or after departure has shown an impact on the success of expatriates in overseas assignments. Shen and Darby (2006) examined the effect of Chinese multinationals' training practices and found that Chinese multinational firms provided limited training for expatriates and, consequently, that cross-cultural training had only a moderately significant impact on Chinese expatriates' adjustment (see also Gao, 2008). The findings of these studies have been inconclusive, suggesting that more empirical research is needed to examine the relationship between organizational support via corporate training practices and on expatriate adjustment experiences during overseas assignments.

Differences in culture, communication styles, and language have been identified as factors that are likely to affect expatriate adjustment (e.g., Dowling & Welch, 2004; Peltokorpi, 2010; Welch, Welch, & Piekkari, 2005), but little scholarly research has addressed the impact of perceived organizational support (POS) (Bhaskar-Shrinivas, Harrison, Shaffer & Luk, 2005; Kawai & Strange, 2014) and even less has examined POS from the perspective of Asian multinational corporations. To help fill the gap, the present study looks at the combined effects of three identified factors - language, culture, and perceived organizational support - among expatriates from five Asian countries. It is hoped that the present study can be useful for both researchers and practitioners in two ways. First, the results of this quantitative study answer the research enquiry as to whether differences exist between the identified

factors (e.g., language, culture, and organizational support). Second, while there has been relatively extensive academic interest in Western expatriates' cross- cultural adjustment in the Asia-Pacific region (e.g. Du-Babcock, 2000; Huang, Chi, & Lawler, 2005; Peltokorpi & Froese 2009, 2012; Selmer, 2005, 2006a, 2006b; Wan & Takeuchi 2007), more empirical evidence is needed to examine Asian expatriates' adjustment processes in a Western context. With the rise of Asian economic superpowers in the global business arena, Asian-based MNCs now send large numbers of expatriates to their overseas business units. The present study, which draws on 331 Asian expatriates from five Asian countries, should enrich our understanding of the interactive effects and importance of language, culture, and organizational support for communication in facilitating Asian MNC expatriates' successful adaptation to their international assignments.

In sum, the purposes of the present study are: (1) to determine whether there are differences among expatriates from five Asian countries in their perceived overseas work adjustments, and its relationship to the language, culture and organizational support, and (2) to examine the effects of language proficiency, culture competence, and organizational support during overseas adjustment periods for Asian expatriates.

Review of Literature

In the present study, three factors that have been identified as likely to affect expatriate adjustments are discussed. These three identified factors are language, culture, and perceived organizational supports (POS). In this study, organizational support for communication takes the forms of an established corporate language (English) working environment policy, corporate training (language and culture) for expatriate employees and local employees, and information communication technology (ICT). The review of the POS literature focuses on the effects of corporate language policy, corporate training, and the importance of information communication technology on enhancing communication efficacy between company headquarters and expatriates.

Language Factors

Studies have increasingly recognized host language competence as an important factor facilitating expatriate adaptation (Caligiuri & Lazarova, 2002; Graf, 2004; Selmer, 2006a; Xia & Feng, 2009). Research addressing the importance of corporate language as part of expatriate preparations has examined how language ability benefits expatriate adjustment in an environment that is culturally and socially different. Chi and Yeh's (2006) study examining Taiwanese expatriates' adjustment in the U.S. found that English-language proficiency was one of the key determining factors in expatriate adjustment. In related expatriate research, language proficiency is found to have an influence on cross-cultural adjustment (Peltokorpi, 2008; Selmer, 2006a; Xu & Du-Babcock, 2012), job satisfaction (Parker & McEvoy, 1993), and intentions to complete expatriate assignments (Shaffer, Harrison, & Gilley, 1999). Selmer (2006a) examined the relationship between Chinese language ability and adjustment among Western business expatriates assigned to China. A study by Marschan-Piekkari et al. (1999) also reflects on the importance of language competence in the expatriates' role and states that "In the host country, the expatriates become the interface, through language, between headquarters and the local subsidiary" (p. 386). All of these studies suggest that expatriates should make an effort to enhance language competence, with priority given to either the host country language or English, in order to perform at a satisfactory level in their overseas assignments (Selmer, 2006a; Xia & Feng, 2009).

Given that western expatriates lack competency in Asian languages (with the exception of younger individuals who are now studying Asian languages in increasing numbers) and Asians are likely to possess intermediate English competency, communication may well take place in English as English is

the *lingua franca* of the business world (Crystal, 2003; Chew, 2009). Companies are increasingly choosing English as their corporate language in a multiple-language environment (Nickerson, 2005). For example, Chinese MNC Lenovo chose English as its corporate working language after it purchased the PC unit of IBM. Uniqlo announced English as its official corporate language in 2012. Although a common corporate language may mask a wide range of continuing language problems (Marshcan-Piekkari et al., 1999), English will probably continue to be the primary option as a corporate language for Chinese or other Asian multinationals for the future, due to the serious shortage of employees who can speak foreign languages other than English (Xia & Feng, 2009).

Cultural Factors

Expatriates need to make cultural adaptations where there is cultural distance between expatriates' home country culture and host country culture. Wider cultural distance may impede and complicate interpersonal relations between expatriates and host country nationals (HCNs) (Johanson & Vahlne, 1977). Expatriates may encounter serious challenges in understanding the implicit or explicit cultural behaviors of local personnel. Such difficulties inhibit effective organizational communications and would eventually impede the job performance of expatriates. Cultural distance makes it challenging for expatriates to develop social ties with (HCNs) and consequently, influence expatriate's networks in foreign subsidiary (e.g., Toh & Denisi, 2007). Studies also have confirmed that expatriates who develop close relationships with HCNs are generally better adjusted and more productive (Mendenhall & Oddou, 1985; Selmer, 2006b), that the interactions with HCNs facilitate expatriate adjustment, and that social contacts and exchanges can also be linked to successful foreign assignments (Aycan, 1997; Caligiuri, 2000).

Two studies examined how cultures (national and corporate) affect the success of expatriate adjustment from the Chinese perspective. Cao (2008) studied how culture influences the post-merger performance of a China-based multinational corporation and addressed the role of the national and organizational cultures of the expatriates from the acquired firms in the shaping of organizational communication behaviors in Chinese mergers and acquisitions. The results suggest that organizational culture prevails over national culture in affecting marketing information communication behavior under a centralized cross-cultural integration strategy; whereas, national culture prevails over organizational culture in affecting marketing information communication behavior under a decentralized cross-cultural integration strategy. Xu (2010) observed that a lack of intercultural communication competence affects information processing within the organization, causes misunderstanding, and even leads to conflicts between headquarters and subsidiaries.

Perceived Organizational Support (POS) and Expatriate Adjustment

Organizational support refers to the support received from headquarters/a parent company, from HCNs personnel at work, and from the local community as seen in the daily interactions of expatriates outside of work. The general thrust of the past research is that home country organizational support can have an impact on the overseas adjustment and job effectiveness. In addition to organizational support from the home country organization, host country organizational support in the domains of work, human interaction, and general living conditions is also critical to the success of expatriate adjustment (Black & Gregersen, 1991). The success of the host country organizational support lies in the extent to which expatriates are comfortable with living in their host country (Black & Gregersen, 1991), or the degree of fit between the expatriate manager and his or her environment (Aycan, 1997). Studies examined the relationships between effective adjustment and the interactions between expatriates and HCNs (Black et al., 1999; Kraimer et al., 2001; Shaffer & Harrison, 2001) suggest that HCNs may assist in expatriates' adjustment in a host country (see also, Olsen & Martins, 2009). In contrast, Toh and DeNisi's (2007) study reveal that other relevant factors (e.g., institutional ethnocentrism) may

affect the willingness of an HCN to provide support to expatriate and thereby hinder expatriate adjustment (see also Johnson, Lenartowicz, & Apud (2006).

In sum, organizational support can act to facilitate or hinder expatriate adjustment and job effectiveness. The review of the literature reveals that organizational support may increase expatriates' desire to remain in an organization and improve their job performance (Rhoades & Eisenberger, 2002), and that expatriates with a high POS are likely to feel that their work is appreciated and acknowledged. The findings also show that the higher the POS from the home and host organization, the better expatriates' overseas adjustment. However, the inconclusiveness of the findings suggests that organizational support may be a facilitating factor that is helpful but not absolutely necessary, and can be seen as negative if headquarters interaction is seen as controlling or intrusive rather than helpful and supportive. In the present research study, organizational support is defined by aspects of corporate language (English) working environment policy, corporate training, and information communication technology. In the next section I will review the relevant literature relating to these three aspects.

Corporate Language (English) Working Environment Policy

Studies by Maclean (2006) and Luo and Shenkar (2006) suggested the strategic importance of corporate language policy in multinationals. Feely and Harzing (2003) pointed out that language barriers can pose negative consequences to foreign market expansion and may weaken the headquarters-subsidiary relationship. To enhance the communication efficacy, multinational corporations should make systematic efforts to institutionalize corporate language policy and provide language training (Andersen & Rasmussen, 2004; Marschan-Piekkari, Welch, & Welch, 1999).

When MNCs institutionalize corporate language policy, the choice of language is likely to be influenced by the language that is spoken by the employees. In a multiple-language environment, companies increasingly choose English as their corporate language (Charles, 2007). For example, after Lenovo, a Chinese MNC, purchased the PC unit of IBM, the company announced that English was chosen as its corporate working language (Chen, 2004). Likewise, in Japan Rakuten and Uniqlo, two large Japanese corporations, announced the adoption of English as their official corporate language in 2012. With the success of adopting English as a corporate language by Rakuten and Uniqlo, Honda Motor Co. has decided to switch its official corporate language for international communications within the company to English by 2020 (https://www.japantimes.co.jp/opinion/2015/07/18/editorials). English has become the de facto "global" language and it is natural to speculate that most multinationals in Asia are likely to adopt English as their preferred corporate language. Therefore, an English-language work environment is chosen as an important factor to examine in relation to how Asian expatriates perceive the importance of implementing English as a corporate language policy.

Corporate Training

Past research on corporate training has shown that expatriate employees receiving pre-departure corporate training tend to perform well in their overseas assignments (e.g., Caligiuri, 1997) and better develop intercultural competencies, thereby facilitating the coordination between their headquarters and the foreign subsidiary. These corporate training initiatives include language training (Tung, 1982), cross-cultural training (Black & Mendenhall, 1990; Landis, Bennett, & Bennett, 2004; Mendenhall & Oddou, 1986; Selmer, 1997), and technical and management training (Tung, 1982). Of these training initiatives, language and cultural training are the two commonly chosen pre-departure corporate training initiatives.

Xu's (2010) study confirms and suggests that corporate language training before the departure enhances expatriates' English competence and therefore helped Chinese expatriates in their overseas assignments. Other studies in relation to the effects of language training suggest that language competence is a predictor of the effectiveness regarding international assignment adjustment (Caligiuri et al., 2009; Lauring, 2008; Mol, Born, & Molen, 2005, Selmer & Lauring, 2015). Bhaskar-Shrinivas, Harrison, Shaffer and Luk's (2005) study concurred and found that language competence is positively correlated with both work and interaction adjustments. Taking the results of these studies together, it is evident that fluency in the designated corporate language (either in host-country language or in English) is an important factor for expatriate adjustment since language seems to be an essential instrument through which expatriates develop their understanding of a new culture (Selmer, 2006b; Selmer & Lauring, 2015).

Cross-cultural training is another aspect of common corporate training that receives relatively more attention than that of language training. Research shows that expatriates receiving pre-departure cross-cultural training adjust better in their overseas assignments. A study by Bhaskar-Shrinivas et al. (2005) has revealed significant and negative relationships between cultural distance and the adjustment. Other research has also confirmed that the cultural distance between home and host countries are likely to affect expatriate adjustment in working attitudes, values, and customs (see, for example, Reus & Lamont, 2008; Selmer, Chiu, & Shenkar, 2007; Stahl & Caligiuri, 2005; Toh & DeNisi, 2007). The assumption is that the greater the cultural distance, the harder the adjustment would be (Black, Mendenhall, & Oddou, 1991). Therefore, providing a cross-cultural training to assist expatriates in adjusting to a new environment with wider cultural distance between home and host country becomes critical (Van Vianen, De Pater, Kristof-Brown, & Johnson, 2004).

Information Communication Technology

Multinational companies cannot operate effectively without information communication. Therefore, another important aspect of organizational support is information communication technology (ICT). Studies by Andersen and Foss (2005) and by Lee (2010) examining the impact of ICT on multinational operations found that the use of ICT facilitated communication among managers across functions and geographic boundaries, while enhancing the coordination of multinational activities. Conrad and Poole's (2005) study suggests that ICT has several important effects: it opens up communication and increases accessibility to essential information, promotes the international expansion of organizations, and fosters inter-organizational connections. Watson Wyatt (2008) identified information communication technology as an important foundational tool for an organization to develop its communication system. Such technology, which usually takes the form of telephone, e-mail, voice mail, instant messenger, video-conferencing, and electronic boardrooms, helps the multinational corporations to overcome spatial and temporal barriers between headquarters and subsidiaries (Xu, 2010).

Based on the literature reviewed, the present study aims to examine the three identified factors: language, culture, and organizational supports – that affect Asian expatriates' adjustment to overseas assignments. Two research questions are put forth to guide the analyses of the present research.

RQ 1: Are there any significant differences among expatriates of five Asian countries in their perceived overseas work adjustments and their relationships to the language, culture, and organizational support?

RQ2: What are the relationships among the three identified factors and the overseas assignment adjustments of Asian expatriates?

Research Method

The study employed a triangulated research method to explore the potentially causal interrelationships between the three identified factors and their consequent associations with expatriate adjustments. Two sets of research data were collected. The quantitative data set contains 331 expatriates from five Asian counties (i.e., Singapore, China, Japan, Korea, and Malaysia). Of the 331 participants who have had more than one overseas assignment, 100 of them are from Mainland China, 100 are from Japan, 48 are from Korea, 43 are from Singapore, and 40 are from Malaysia. The online questionnaire was posted via Rakuten Insight Singapore Pte. Ltd. (Hong Kong) Website. The questionnaire, designed by the researcher, was in English and then translated into Chinese, Japanese, Korean, and Malay. Native speakers of the respective language checked whether the translation was in line with the English version by using the back translation method. The questionnaire consists of four parts. Part 1 includes the demographic data. Part 2 contains 10 statements of which 4 statements were open-ended questions in relation to the overseas assignments and adjustments. Part 3 contains 8 statements in relation to language and 8 statements in relation to culture. Part 4 contains 7 statements dealing with organizational support. Part 5 contains 3 open-ended questions on organizational supports.

The quantitative data examine the similarities and differences between the overseas assignment adjustments among expatriates from five Asian countries. The data also examines the effect of three identified constructs (language, culture, and organizational supports) on expatriate adjustments. The analysis contains three parts: (1) a MANOVA test compares the three constructs among the five countries; (2) a post hoc test measures between-country comparisons of three constructs among five countries; and (3) the Pearson's Correlation Coefficients examine the effect of the three constructs on overseas assignment adjustments.

The questionnaire data also consists of open-ended questions related to overseas assignment adjustments and organizational support. Questions related to the overseas assignments are: (1) the number of months taken to adjust to the new environment, (2) the factors inhibiting the overseas adjustments, (3) successful strategies in copying with difficulties, and (4) unsuccessful incidents and what could be done to improve future adjustment. Open-ended questions related to organizational reports are: (1) organizational support received before taking on the overseas assignment, (2) effects of organizational support, and (3) what can be done to enhance this support in terms of its effect on your professional development. The collected qualitative data other than English are translated into English for further analysis. In total, there are about 28,000 words. For this article, the study reports and analyzes only the quantitative data.

Findings

The findings for the two research questions focus on (1) whether there are any significant differences in the expatriates' overseas adjustment among the five groups of respondents in terms of three identified variables, namely language, culture, and organizational support; and (2) whether the three variables have any relationships with the overseas adjustment.

RQ 1 examines the effects of the three identified variables on expatriates' overseas adjustments. To answer this research question, the researcher first employed the Multivariate Analysis of Variance

(MANOVA) to compare the mean scores for the language proficiency, cultural competence, and organizational supports among the five groups of Asian respondents. Second, a post hoc test was performed to measure between-group comparisons.

MANOVA Test to Compare the Mean Differences Among Five Countries

The results of the MANOVA, shown in Table 1, indicate significant differences at the 0.01 level among the five research groups in the aspects of overseas work adjustment ($F=9.401$, $p<.01$), language proficiency ($F=18.232$, $p<.01$), cultural competence ($F=9.804$, $p<.01$) and organizational support ($F=20.574$, $p<.01$).

Table 1

Multivariate Analysis of Variance Test to Compare Overseas Adjustment among the Five Researched Groups

	F	P value
Composite mean score of overseas work adjustment	9.401	.000**
Composite mean score of overseas language ability	18.232	.000**
Composite mean score of overseas cultural competence	9.804	.000**
Composite mean score of overseas organizational supports	20.574	.000**

** p <.001 (two-tailed)

A post hoc test was used to further examine the between-group differences. In regard to the overseas work adjustment, significant differences were found between the Chinese and the Japanese ($M=5.22$ vs 4.54, $p<0.01$) and between Chinese and Koreans ($M=5.22$ vs 4.85, $p<0.05$). As for the perceived host- or English-language proficiency, the mean scores of the Japanese expatriates is the lowest compared to the other four groups (Singaporeans, Chinese, Koreans, and Malaysians), and the differences were significant at the .01 level. However, no significant differences were found between the four groups.

The post hoc test for cultural competence also shows significant differences between the Chinese and Japanese ($M=4.6$ vs 4.01) and between Malaysians and Japanese ($M=4.65$ vs 4.01) at the .01 level, while the difference between the Koreans and Japanese ($M=4.96$ vs 4.01) is significant at the 0.05 level. Significant differences were also found in the perceived organizational supports: the mean scores of the Japanese respondents were significantly different from those of the other four groups at the 0.01 level. Difference was also found between the Chinese and Singapore groups ($M=4.83$ vs 4.38, $p<.05$).

Research question 2 examines the causal relationships of the three identified constructs and the overseas assignment adjustments. To answer RQ2, Pearson's correlation coefficient was conducted, and the findings are presented as follows.

Pearson's Correlation Coefficients to Examine Effects of Three Identified Constructs on Overseas Adjustments

Pearson's correlation coefficient was conducted to answer RQ 2, which examines the relationships among the three constructs and overseas assignment adjustment. The results indicate that both language proficiency and perceived organizational support correlate strongly with the expatriates' adjustments ($r = .546$ and $.548$, respectively), while cultural competence correlates only weakly ($r=.123$).

In order to closely examine factors that influence the expatriates' overseas assignment adjustments, Pearson's Correlation Coefficients were further conducted to scrutinize the causal relationships between the overseas adjustments and sub-statements that are related to language proficiency, cultural competence, and organizational supports. The results are presented in the next section.

Effects of Language Proficiency on Expatriates' Overseas Assignment Adjustments

Table 2 presents the correlation results of the language sub-statements on expatriates' overseas assignment adjustment. The results reveal that expatriates who rated their overseas host-country or English-language proficiency as "high" (LA8) tended to be more satisfied with their overseas assignment ($r= .427$, $p<0.01$) and felt more confident in coping with stress ($r=.429^{**}$, $p<0.01$). Expatriates with perceived high host country or English-language proficiency also felt that they could get along well with host country nationals ($r=.349$, $p<0.01$) and maintain good communication with headquarters during their overseas assignments ($r=.379$, $p<.01$).

Expatriates who felt that their good English or host- country language competence facilitated their experience of living overseas (LA2) were likely to rate their degree of satisfaction on their overseas assignments as high ($r=.381$). These expatriates also felt that they could cope with the stress well ($r=.431$), get along well with host country nationals ($r=.371$) and maintained good communication with HQ ($r=.438$) at a significance level of 0.01. Good language proficiency facilitated their adjustment to the new environment by helping them know about the economic and legal systems of the host country ($r=.308$) as well as keep abreast of recent changes in the host country ($r=.354$). Being able to convey ideas and state points clearly in English/the host-language (LA 3) and enabling them to be understood by local personnel (LA4) were also considered important factors by expatriates ($r=.478$ and $r=.466$ respectively).

Effects of Cultural Competence on Expatriates' Overseas Assignment Adjustments

The second part of the Part 3 questionnaire contains 8 sub-statements in relation to culture. The Pearson's Correlation Coefficients were employed to examine the relationships between eight sub-statements of cultural competence and expatriates' overseas assignment adjustments. Table 3 presents the Pearson correlation coefficient for the relationships between the sub-statements on cultural competence and expatriates' adjustment to overseas assignments. Expatriates who rated their feeling of confidence in coping with the stresses of adjusting to the new culture as high (C8) also rated themselves high in their satisfaction with their overseas assignment ($r=.474$), getting along well with host country nationals ($r=.428$), being willing to learn about the economic and legal systems ($r=.406$) of the host country, and keeping abreast of the changes in the host countries ($r=.444$). Results also show that expatriates who knew their own national culture well (C1) or the culture of the host country well (C2) were likely to be satisfied with their overseas assignment adjustment in all aspects.

Effects of Organizational Supports on Expatriates' Overseas Adjustments

Part 4 of the questionnaire contains 7 sub-statements dealing with organizational support. The findings from examining the extent to which organizational support affects expatriates' adjustment are presented in Table 4. The essence of the organizational support includes institutionalizing the policy of English as a corporate language (POS1), the effects of English/host-language training (POS2) and Cross-cultural training (POS4), and the importance of information communication technology in enhancing communication with HQ (POS7).

The sub-statements related to the organizational supports also examine whether and how the English or host-country language training (POS2) provided by HQ helps expatriates' overseas assignment adjustments. The results show that corporate language training only moderately affected the expatriates' overseas adjustments in terms of being satisfied with the overseas assignments (r=.339), being confident in coping with the stress (r=.334), and getting along well with host country nationals (r=.322).

The same statistical analysis also applied to examine the effects of cross-cultural training (POS4) on their overseas assignment adjustments. The results reveal a strong correlation between the cross-cultural training and good communication with HQ (r=.477). The effects on expatriates' overseas adjustments and communicating with host country nationals are however moderately correlated, ranging between 3.23 and 3.67 at a significant level of 0.01.

The investigation of whether information communication technology (ICT) was critical in enhancing expatriates' communication with HQ (POS7) reveals a consistently strong correlation between ICT and expatriate work adjustments. Among all items related to organizational supports, information communication technology was considered the most important and is highly correlated with overseas assignment adjustments with r values between .402 and .443. The results show that expatriates strongly believe that information communication technology enhances their communication with headquarters and this in turns help them better adjust (r=.424) and feel more confident in coping with the stress brought about by the overseas assignments (r=.443).

Table 2

Correlations of the Sub-statement of Language Proficiency on Expatriates' Overseas Work Adjustments

Variable	WA1	WA2	WA3	WA4	WA5	WA6	LA1	LA2	LA3	LA4	LA5	LA6	LA7	LA8
WA 1	1													
WA 2	.641**	1												
WA 3	.592**	.524**	1											
WA 4	.518**	.489**	.451**	1										
WA 5	.501**	.509**	.540**	.453**	1									
WA 6	.562**	.579**	.532**	.513**	.601**	1								
LA1	.425**	.445**	.324**	.424**	.233**	.296**	1							
LA2	.381**	.431**	.371**	.438**	.308**	.354**	.735**	1						
LA3	.478**	.482**	.400**	.475**	.348**	.395**	.705**	.744**	1					
LA4	.446**	.493**	.385**	.458**	.317**	.374**	.701**	.773**	.725**	1				
LA5	.456**	.453**	.393**	.437**	.267**	.312**	.724**	.721**	.774**	.705**	1			
LA6	.432**	.417**	.415**	.429**	.380**	.387**	.444**	.490**	.535**	.498**	.522**	1		
LA7	.243**	.265**	.232**	.227**	.214**	.197**	.455**	.423**	.453**	.420**	.436**	.354**	1	.
LA8	.427**	.429**	.349**	.379**	.250**	.282**	.748**	.752**	.755**	.736**	.755**	.491**	.460**	1

Keys: WA indicates overseas work adjustment; WA1 indicates overseas work adjustment sub-statement 1; LA indicates language proficiency; LA1 indicates language proficiency sub-statement 1; * p<.05; **p<.01 (two-tailed)

Table 3

Correlations of the Sub-statement of Cultural Competence on Expatriates' Overseas Work Adjustments

Variable	WA1	WA2	WA3	WA4	WA5	WA6	C1	C2	C3	C4	C5	C6	C7	C8
WA 1	1													
WA 2	.641**	1												
WA 3	.592**	.524**	1											
WA 4	.518**	.489**	.451**	1										
WA 5	.501**	.509**	.540**	.453**	1									
WA 6	.562**	.579**	.532**	.513**	.601**	1								
C1	.497**	.418**	.447**	.457**	.462**	.465**	1							

C2	.409**	.441**	.419**	.415**	.459**	.434**	.551**	1						
C3	.465**	.507**	.452**	.462**	.433**	.505**	.628**	.546**	1					
C4	.483**	.434**	.485**	.317**	.414**	.447**	.500**	.536**	.512**	1				
C5	.450**	.486**	.509**	.365**	.523**	.574**	.548**	.597**	.603**	.554**	1			
C6	.414**	.341**	.347**	.429**	.340**	.329**	.505**	.491**	.527**	.384**	.499**	1		
C7	.430**	.457**	.400**	.337**	.461**	.444**	.481**	.553**	.556**	.561**	.515**	.496**	1	
C8	.474**	.525**	.428**	.384**	.406**	.444**	.519**	.592**	.590**	.490**	.603**	.433**	.493**	1

**p<.01 (two-tailed)

Table 4

Correlations of the Sub-statement of Organizational Supports on Expatriates' Overseas Work Adjustments

Variable	WA1	WA2	WA3	WA4	WA5	WA6	POS1	POS2	POS3	POS4	POS5	POS6	POS7	POS8
WA 1	1													
WA 2	.641**	1												
WA 3	.592**	.524**	1											
WA 4	.518**	.489**	.451**	1										
WA 5	.501**	.509**	.540**	.453**	1									
WA 6	.562**	.579**	.532**	.513**	.601**	1								
POS1	.381**	.421**	.312**	.403**	.297**	.298**	1							
POS2	.339**	.334**	.322**	.491**	.297**	.325**	.567**	1						
POS3	.373**	.343**	.381**	.500**	.323**	.295**	.593**	.621**	1					
POS4	.323**	.371**	.340**	.477**	.367**	.365**	.528**	.655**	.620**	1				
POS5	.423**	.383**	.377**	.495**	.365**	.336**	.548**	.564**	.596**	.587**	1			
POS6	.350**	.273**	.312**	.351**	.237**	.173**	.469**	.503**	.505**	.514**	.439**	1		
POS7	.424**	.443**	.420**	.442**	.389**	.402**	.518**	.550**	.541**	.460**	.549**	.380**	1	
POS8	.442**	.434**	432**	.555**	.404**	384**	.726**	.772**	.799**	.775**	.754**	.678**	.687**	1

**p<.01 (two-tailed)

Discussion and Conclusions

The purpose of the present research was first to compare the mean scores of expatriates from five Asian countries on the three identified constructs (language, culture, and organizational supports) related to their adjustment to overseas assignments. Second, the research examines the relationships among the three constructs and overseas assignment adjustment. The results of the MANOVA test show significant differences among the five groups of expatriates. Post hoc tests were also performed to further examine the between-country differences. Post hoc tests were performed to further examine the between-group differences. The results of the post hoc tests reveal significant differences between the Japanese and the other four groups in all aspects of language proficiency, cultural competence, and organizational support. In addition to the MANOVA test, ANOVA was also applied to examine each individual construct.

The second set of research question investigates the relationships between the three constructs and overseas assignment adjustments. Results of the Pearson's Correlation Coefficients indicate that both language proficiency and organizational supports correlates strongly with the expatriates' overseas work adjustments, while cultural competence correlates only weakly. The interrelationships of language proficiency and overseas assignment adjustments show a strong correlation, indicating that language proficiency better predicts the overseas adjustment. coping with stress, getting along with host country nationals, and maintaining good communication with the headquarters.

Analysis of cultural competence statements also reveals a strong correlation with adjustments, indicating that expatriates with high cultural competence are likely to be more satisfied with their overseas assignments, feel confident in coping with stresses, get along well with host country nationals. Expatriates with high cultural competence tend to have better attitudes towards host country environment. As for the organizational support, the results show the importance of institutionalizing the policy of English as a corporate language, of English/host-language training and cross-cultural training, and of information communication technology in enhancing the communication with HQ.

Limitations

Although the overall findings of the present study are relatively significant, the results should be interpreted with caution due to its limitations. The present study is self-reported data in regard to respondents' perceived language ability, cultural competence, and organizational support. As such, the present study may have contained typical limitations related to the use of a self-rating questionnaire, such as respondents exaggerating or under-reporting their situations. Although self-reported data may have created some unavoidable shortcomings, empirical evidence has suggested that people can provide information by reflecting on their own views (Riggio & Riggio, 2001). The design of the sub-statements in each of the identified constructs can compensate the weakness of the self-reported data enabling the researcher to spot the inconsistency.

The second limitation of the study relates to the sample. The participants were recruited by a contracted research company, which may imply a biased research context. Although five research countries are categorized as collective cultures, the uneven number of the respondents may not be representative and cannot be generalized to another geographic contexts.

The third limitation of the present study relates to the methodological issue. It has been a decade since Bhaskar-Shrinivas and associates (2005) called for a need for longitudinal research, yet "fewer than five percent of the existing studies are longitudinal" (p. 273). To accurately reflect the effects of how the

three identified variables affect expatriate adjustments over time, there is a need to employ longitudinal designs that examine expatriate adjustments as a long-term process rather than a momentary event (Haslberger & Brewster, 2009).

Implications

The present study contributes to the international business and expatriate communication literature on language, culture, organizational supports, and expatriate overseas adjustment in three ways. First, the study contributes empirical quantitative data to the body of knowledge about Asian expatriate adjustments that will be valuable for researchers in general, and Asian expatriate adjustment in particular. Second, the study focuses on expatriate adjustments from five Asian countries, which means the findings will have relevance for Asian organizations in selecting and preparing expatriates for overseas postings. Third, the results of the study are relevant to those involved in the education and training of business professionals who will become employees in MNCs.

The current research has implications for both researchers and practitioners. For researchers, although expatriate adjustment has been widely researched, the current study reveals a need for more empirical research into the multifaceted (culture, language, and organizational-related) factors that are likely to facilitate or impede expatriate overseas adjustment. The study also ascertains and describes how language ability, cultural competence, and organizational support affect the adjustment of Asian expatriates (Singapore, China, Japan, Korea, and Malaysia).

Overall, this study contributes to the theoretical knowledge about expatriate overseas adjustment and to the emerging body of literature on language and intercultural competence in global business contexts. Particularly, the research shows how language and cultural competence together with organizational support can enhance the global operations of multinationals from Asia and facilitate overseas assignment adjustment of Asian expatriates.

Suggestions for Future Research

Against the background of these findings, I suggest that future additional research examine the necessary language, culture, and organizational support in other Asian multinational corporations and from different industries. It is also suggested that future research include both quantitative and qualitative data collection methods. Last, a longitudinal study of expatriation (e.g., collecting data at 6 months, 12 months, 18 months, and 24 months) can be critical to examine the essence of overseas adjustment in various stages of expatriation. Taking a longitudinal approach, future research can examine the communication efficacy of Asian expatriates in relaying organizational policy. As noted by Breiden, Mohr, and Mirza (2006), assignment to an overseas assignment is a continuous and dynamic process, and adjustment stages should be monitored on the job in order to accurately reflect the adaptation of expatriates.

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Down the Rabbit Hole and Back: Towards Casual Conversation Theory

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Abstract

Casual conversation in the workplace fosters free exchange of ideas and knowledge creation and may contribute to employee feelings of engagement and satisfaction. A positive working environment may also lead to employee retention. Casual conversation's role in the learning process is also explored. Through a series of proposition statements and the related 360 Degree Model of Ideal Workplace Conversation, Casual Conversation Theory aims to articulate the nature of the communication and knowledge flows that occur during informal interactions.

Introduction

Members of today's traditional workforce spend roughly half their waking hours at work (US Bureau of Labor Statistics, 2017). During those extended hours, various types of conversations among co-workers will occur—some more directly work-related and others more personal or social, or a hybrid of the two. Human connections have the potential to offer cognitive benefits, such as a boost to executive functioning, and therefore have the potential to improve work performance (Ybarra, Winkielman, Yeh, Burnstein, & Kavanagh, 2010). It can be difficult to classify conversations as purely work-related or personal, since discussions may cover both professional and social topics during an interaction. Bakker (2011) and Rawlins (2009) have argued that organizations should facilitate the free exchange of ideas and information at work. Individuals possess the majority of a company's overall knowledge, mostly in the form of tacit knowledge, or knowledge that is hidden within an individual and cannot be easily articulated (Smith, 2001; Nonaka, 2008). Given the difficulty in extracting valuable knowledge resources from the individual, organizations may wish to take steps to actively retain employees. Losing workers leads to decreased institutional knowledge and increased financial costs. In 2016, the average cost per new hire in the United States was $4,425 (2017 Talent Acquisition Benchmarking Report). However, keeping employees satisfied may require more than competitive monetary compensation. A lack of several elements, such as motivation, appreciation, rewards, recognition, security, advancement, and communication between employees and managers can also lead to attrition (Thaly & Sinha, 2013).

Organizations may benefit from strategies that make employees feel valued and engaged, since engagement has been shown to increase employee productivity (Shepherd, 2018). Empowering workers to talk to each other, though a simple strategy, may be a critical component to ensuring employee satisfaction and retention. The occurrence of casual conversation, in a workplace or between colleagues outside of the workplace, will also lead to increased exchange of tacit knowledge, which is likely to benefit the organization. This paper explores the notion of casual conversation, its potential benefits in the workplace, and factors which may empower or inhibit its occurrence.

Literature Review

Casual Conversation Defined

Scholars have been studying informal interpersonal interactions for the last century (Malinowski, 1923; Laver, 1975; Eggins & Slade, 1997). Though the author of this paper refers to these interactions as casual conversation, prior research uses terms such as phatic communion and small talk to refer to the same concept.

Phatic communion is a term first created in an essay by British anthropologist Bronislaw Malinowski to refer to brief, casual exchanges that do not seek or offer information (Malinowski, 1923). According to Malinowski, it is meaningless communication used during the exchange of social pleasantries that “fulfill a certain function, and that is their principal aim, but they are neither the result of intellectual reflection, nor do they necessarily arouse reflection in the listener” (Malinowski, 1923, p. 315).

Laver revisits this notion half a century later by exploring the potential benefits of engaging in phatic communion (Laver, 1975). He posits that phatic communion is not a simple phenomenon, as previous scholars had suggested, but rather a process that creates connections through "subtle and intricate means whose complexity does not deserve to be minimized by the use of phrases as 'a mere exchange of words'" (Laver, 1975, p. 216). Laver's research, which focuses on conversational openings and closings, describes phatic communion as "a complex part of a ritual, highly skilled mosaic of communicative behavior whose function is to facilitate the management of interpersonal relationships" (Laver, 1975, p. 236). He further asserts that while phatic exchanges are not conducted for the express purpose of fact-finding or seeking, information is often exchanged during these interactions (Laver, 1975).

A more recent study in a healthcare setting also finds value to phatic communion. Researchers conducted qualitative interviews with 40 people between the ages of 64 and 90 about experiences in healthcare, using seemingly phatic questions, such as "How are you?" (Coupland, Coupland, & Robinson, 1992). Though the responses themselves did not result in emergent themes, there were observable differences in the way the participants transitioned from phatic openings with different extents of hedging towards full disclosure of health-related concerns (Coupland et al, 1992). Most of those interviewed discussed their health experiences "while still to an extent respecting the potentially ritualized nature of the initial question they were asked” (Coupland et al, 1992, p. 227). Researchers believe these findings show promise for phatic communion to serve as a bridge between relational and interactional communication (Coupland et al, 1992). Furthermore, it suggests practitioners may benefit from incorporating sociolinguistic skills into their medical practice by asking simple, open-ended questions such as, “How have you been lately?” Fisher’s comparative discourse analysis of doctor-patient and nurse practitioner-patient dyads illustrates the depth and breadth of dialogue that can result from asking open-ended non-medical questions (1991). Discoveries about a patient’s life made during the conversation can help inform a medical diagnosis (Fisher, 1991).

Other scholars move away from the notion of phatic communion and aim to construct definitions for what they refer to as casual conversation. Ventola constructs a detailed structure for what defines a wide range of casual conversations, by establishing variables of subject-matter, situation-type, participant roles, mode, and medium of discourse (Ventola, 1979). She identified several key phases of the casual conversation as greeting, approach, centre, and leavetaking and classified conversations as minimal or nonminimal based on the social distance between parties (Ventola, 1979). According to

Ventola, a minimal structure serves to establish or maintain contact between individuals, and non-minimal structures offer greater potential outcomes (Ventola 1979). For example, a conversation that consists only of an exchange of pleasantries may be considered minimal in Ventola's view; whereas a conversation that extends beyond the greeting phase and delves into another question or topic for more than a brief moment may be considered nonminimal. Eggins & Slade also use the term casual conversation to refer to informal interactions, including talk "for the sake of talking itself," that is not motivated by a clear pragmatic purpose (Eggins & Slade, 1997, p. 6). They acknowledge casual conversation's role in the construction of interpersonal relations and social identities (Eggins & Slade, 1997). They argue that the ability to speak freely with another person is what makes the exchange so powerful—"The paradox lies in the fact that casual conversation is the type of talk in which we feel most relaxed, most spontaneous and most ourselves, and yet casual conversation is a critical site for the social construction of reality" (Eggins & Slade, 1997, p. 16). Through that free exchange of ideas emerges what the authors consider the hallmark of successful casual conversations—a tension between "establishing solidarity through the confirmation of similarities, and, on the other hand, asserting autonomy through the exploration of differences" (Eggins & Slade, 1997, p. 22).

Structurally, Eggins & Slade (1997) classify conversational phases into chat segments (very short bursts) and chunk segments (longer segments in which a single speaker dominates the conversation). They further refer to chat as a conversational construct that is managed locally and chunk as a construct that fits into a global or macro-structure. Researchers have more recently begun to examine conversational structure as a first step towards developing a model for artificial machine-based dialogue (Gilmartin, Vogel, Saam, Campbell, & Wade, 2018b). In the 2018 study of six hour-long informal conversations, findings show that chat was most common during the first 8-10 minutes of conversations (Gilmartin et al, 2018b). As conversation continues, chunks emerged more frequently and became the dominant modicum of conversation. "It can be seen that there is a greater tendency for the conversation to go directly from chunk to chunk the longer the conversation continues" (Gilmartin et al, 2018b, 57). There was no significant gender difference between chunk duration distributions, and overlap was found to be more common during chat phases than chunk phases (Gilmartin et al, 2018). A team of researchers with some overlap with the Gilmartin group has also explored conversations among three or more speakers for the purposes of enhancing natural dialogue between human and machine conversational partners (Gilmartin, Cowan, Vogen, & Campbell, 2008a). The authors suggest future research could explore ways to model casual talk as a series of mini dialogues that could apply to different corpora (Gilmartin et al, 2018b).

Casual Conversation in the Workplace

The workplace is one such setting, where various conversational corpora exist. The work of Eggins & Slade considers casual talk at work and explores typical topics discussed and their frequency (Eggins & Slade, 1997). Through the study of three hours of coffee break conversation at three different workplaces, the authors categorize the genres discussed during the longer chunk sections of discourse and explore differences between male and female coworkers. Across the three groups, storytelling was most prevalent at 43.4% followed by observation/comment (19.75%), opinion (16.8%), gossip (13.8), and joke-telling (6.3) (Eggins & Slade, 1997). The most frequently occurring talk type in the male cohort was teasing or friendly ridicule, and gossip did not occur in this group; whereas gossip and storytelling were most common among women, and teasing did not occur (Eggins & Slade, 1997).

Other researchers examine both the structure and potential benefits of casual conversation in the workplace (Coupland, 2000; Koester, 2006; Mavraki and Akoumianakis, 2014). Koester refers to

workplace discourse as relational talk and divides it into five main categories—non-transactional conversations, which include office gossip and small talk; phatic communion, which includes small talk at the beginning or end of transactional conversations; relational episodes, which include small talk or office gossip occurring during a transactional task; relational sequences and turns, which include non-obligatory task-related talk with a relational focus; and interpersonal markers, which include the use of vague language during transactional talk (Koester, 2006). Content covered during non-transactional talk includes everyday topics such as the weekend, holidays, family and friends, personal experiences, food, weather and current events; and Koester finds that close co-workers engage in more frequent small talk, which can be a "catalyst for a turning point in the work-related discussion" (Koester, 2006, p. 143). Despite having developed a classification system for workplace discourse, Koester acknowledges a gray area and asserts the importance of non-transactional talk in the process of completing workplace tasks—"The interplay between transactional and relational goals can be multi-layered and complex" (Koester, 2006, p. 144). Several workplace dimensions are described as benefiting from relational sequences (Koester, 2006, p. 157):

- Contributing to a positive working relationship by showing affiliation and solidarity
- Demonstrating why the task is important, and thereby validating its performance
- Performing a discursive action (e.g. an account) indirectly and thus avoiding or defusing awkward or conflictual identities
- Negotiating institutional and discursive identities. (For example, through conversation a subordinate may take the lead in trying to solve a problem, thus constructing a dominant discursive identity.)

Individuals interviewed in the study also had an awareness of the existence of small talk and saw its benefit in the organization—"All the interviewees felt that small talk did have a function and was not just trivial, from very general remarks that it 'humanizes the enterprise' to more sophisticated ideas about the role it performed in relation to their work" (Koester, 2006, p. 159). One speaker remarked that solutions to problems sometimes emerged during small talk (Koester, 2006). Freed and Ehrlich also found support for the interplay between what they call ordinary talk and institution talk (2010)**.** They further find that just as institutional talk is not confined to the institution or organization, ordinary talk takes place within the organization (Freed & Ehrlich, 2010)**.** Similarly, Coupland acknowledges the "blurring of traditional lifeworlds — e.g. 'the world of work' vs. 'the world of leisure' becoming less distinct in an information society" (Coupland, 2000). She also points to the importance of small talk in a commercial setting through a discussion of a British Telecom booklet titled *Talk Works: How to Get More out of Life through Better Conversations* (1997). The excerpt chosen by Coupland aims to show the importance of casual conversation between an apparent customer and worker in the service industry—"It may be just Gail's way of saying 'I like you. I value your company." To dismiss this kind of conversation - small talk, as we call it - as unimportant is to deny Gail the opportunity to demonstrate her friendship" (as cited in Coupland, 2000). Others concur that it is difficult to draw a solid line between business talk and small talk in an organization and that "there is a continuum from one to the other, with many different kinds of 'off-topic' discourse functioning in interesting ways in between'" (Holmes, 2000, p. 56). Holmes also raises the issue of workplace power relationships affecting the existence of small talk, describing the typical situation where supervisors determine the extent to which small talk can take place (Holmes, 2000).

Just as formal and informal communication both occur in organizations, workplace learning also occurs both formally and informally in a dynamic fashion, where formal learning stimulates informal learning, and vice versa (Leslie, Airing, & Brand, 1997). Studies suggest that as much as 70% of workplace learning

may be informal, and it occurs most often when employees are motivated to learn (Leslie et al, 1997). Informal learning can be self-directed, better retained than formal learning, and may lead to better employee performance (Leslie et al, 1997). Informal learning can happen naturally at unplanned times and locations, especially when casual conversation takes place and allows for tacit knowledge exchange (LeClus, 2011). Other studies suggest informal learning in professional settings may lead to increased problem-finding and –solving, interpersonal connectivity, and increased knowledge sharing and creation (Wilson & Hartung, 2015). An example from my own professional experience in higher education may serve to illustrate this process. A colleague involved in a casual conversation with another university professional caught a brief mention of a new travel policy. Not receiving direct communication about the new policy but recognizing its importance, my colleague asked questions to learn more about how the policy might affect her area. The result of the casual conversation involving my colleague was new knowledge that spurred immediate additional steps that were taken to ensure compliance with the previously unknown policy. More broadly, this situation also exposed a larger concern about a systemic breakdown of critical information flows.

Casual Conversation and Knowledge Transfer

Knowledge Management theories offer formalized approaches to analyzing and describing the way the two major types of knowledge, explicit and tacit, move from person to person that can occur during casual conversation. Explicit knowledge is sometimes also referred to as tangible knowledge, and tacit knowledge is less concrete and harder to articulate, as it is generally retained in the minds of the knowers (Dalkir, 2017). The four basic patterns for knowledge transfer in an organization are tacit to tacit, explicit to explicit, tacit to explicit, and explicit to tacit (Nonaka, 2008). In his foundational piece, Polanyi describes tacit knowledge as a "mechanism which can produce discoveries by steps we cannot specify," that is essential to all understanding, even seemingly explicit matters (Polanyi, 1966). Although nearly 90 percent of knowledge in any organization may be classified as tacit knowledge, such knowledge is often undervalued and underutilized in organizations that lack supportive environments based on trust and openness (Smith, 2001). Face-to-face contacts, such as casual conversations, are the mechanism in which up to two-thirds of work-related information is gradually transformed into tacit knowledge (Smith, 2001). Sometimes, the solution is as simple as letting people communicate freely.

> “Creating expensive hardware and software to share knowledge works only when people talk to one another regularly at work, network, serve on task forces or attend conferences and knowledge fairs. An organization is what it knows” (Smith, 2001, p. 320).

Other scholars argue that extracted knowledge cannot be recreated outside the individual.
Through a case study of a small company in England, Devane and Wilson explore the notion that employees are better served managing the complexities of their own knowledge (2009). Rather than try to artificially extract or reassemble employee knowledge, the company studied created a culture where knowledge was needed to prosper, and employees were encouraged to seek out the knowledge they needed (Devane & Wilson, 2009). Under this less structured, performance-based approach, knowledge became a necessary and tangible product (Devane & Wilson, 2009). Rather than creating traditional knowledge management systems in organizations, Devane and Wilson suggest viewing knowledge as "something that is inextricable from the individuals within the business, and that the best way to 'manage it' (that is, get the best use out of it) is to allow the individual to manage it themselves" (2009, p. 38). Though the authors seem to support the idea of free sharing of information, they also suggest the person best suited to use knowledge is the original possessor. This approach also respects unique employee cultures, which may inform an individual's knowledge orientation (Devane & Wilson, 2009).

Organizational Communication Perspective

By incorporating analysis of both theory and practice, the subdiscipline of organizational communication provides an additional lens through which to view casual conversation in the workplace. Groups of various sizes serve as the primary site for many organizational accomplishments, and group members fulfill two common and mutually dependent roles—task roles and maintenance roles (Benne & Sheats, 1948). Task roles often include individual activities, such as idea formation or information seeking, that are concerned with job accomplishment. Maintenance roles, which include providing support or encouraging others, focus on maintaining interpersonal relationships with an organization. Kreps states that task and maintenance roles are well integrated in effective organizations (1990). "To accomplish the organizational tasks that are enhanced by task roles, organization members must be able to work cooperatively, which is enhanced by maintenance roles" (Kreps, 1990, p. 171).

Communication in an organization is closely linked with the organizational climate, or the internal emotional tone of the organization. Kreps describes the relationship between organizational climate and communication as circular. "Friendly communication climates encourage organization members to communicate in an open, relaxed, and convivial manner with fellow members, while negative climates discourage open and friendly communication" (Kreps, 1990, p. 194). Gibb's communication climate model describes an organization's communication climate as a continuum from supportive to defensive (1961). Strong supportive climates have also been linked to enhanced organizational effectiveness (Kreps, 1990). Other researchers have connected organizational climate with job satisfaction and performance (Pritchard & Karasick, 1973). Through a study of 76 managers from two organizations with divergent values (high achievement orientation and expansion oriented vs. low achievement orientation and less dynamic), Pritchard and Karasick found strong evidence that job satisfaction relates positively to several dimensions of climate—"perceptions of the supportiveness and friendliness of the climate, how effectively it deals with its operating and competitive problems, how well the climate rewards its employees, and the degree of democratization achieved in the organization" (Pritchard & Karasick, 1973, p. 142).

Organizational communication consists of both formal and informal communication. The focus here is on informal communication, since the informal mode of communication more closely aligns with the notion of casual conversation. In organizations, informal communication is sometimes referred to as the grapevine, which has been regarded as "evil," a "safety valve," or a "very mixed blessing" (Davis, 1953). Though the term grapevine sometimes has a negative connotation, it has potential to be highly useful and powerful for organization members to quickly disseminate information that may affect their job or that they simply want to know in a timely fashion (Davis, 1953). In his landmark study, Davis further suggests that management should not only acknowledge the existence of this informal channel of communication but also encourage and cultivate it (1953). "No administrator in his right mind would ever try to abolish the management grapevine. It is as permanent as humanity is. It should be recognized, analyzed, and consciously used for better communication," (Davis, 1953, p. 43). Kreps states that formal and informal communication channels can and should coexist since they both serve important and interdependent roles in an organization (1990).

Dialogue has been described as not only a necessary activity in an organization but also an important factor in the construction of self-concept. "Whenever we interact with others, we engage in conversations that affect our perceptions of ourselves" (Eisenberg, Goodall, & Trethewey, 2007, p. 43). Scholars have explored three dimensions of organizational dialogue, which represent an increasing extent of collaboration and respect for those involved—dialogue as equitable transaction, dialogue as

empathetic conversation, and dialogue as real meeting (Eisenberg et al, 2007). Even the most basic type of dialogue, equitable transaction, is rooted in fairness, as all participants are granted the ability to voice their opinions. In empathetic conversation, participants aim to understand the world as others see it. In the least common type, dialogue as real meeting, "a genuine communion can take place between people that transcends differences in role or perspective and that recognizes all parties' common humanity" (Eisenberg et al, 2007, p. 50). Though the third dimension, dialogue as real meetings, is rare, the human connection that results can play a critical part in transforming an organization into an energetic, enjoyable workplace with increased job satisfaction and reduced turnover rates among employees (Eisenberg et al, 2007). Others identify dialogue as an important dimension in expanding understanding in a way that cannot be achieved by the individual alone. “The result is a free exploration that brings to the surface the full depth of people’s experience and thought, and yet can move beyond their individual views,” (Senge, 2006, p. 224).

Towards Casual Conversation Theory

Salis and Williams (2009) refer to knowledge stocks as knowledge embedded in workers and knowledge flows as the system of harnessing that knowledge. One way to facilitate this flow of knowledge is by allowing conversation to occur naturally in the workplace, even if it appears to be mostly social. Personal contact enhances the exchange of tacit knowledge (Nonaka, 2008). Those natural conversations, in which people are most comfortable, often lead to the most fruitful ideas. Generally, the parties are more relaxed in these cases. In the absence of pressure to quickly come up with an idea in a limited period or formal setting, we find an increased propensity for idea generation. This is not a linear process, and there are no guarantees that work-related ideas will follow from all social conversations, but time spent conversing allows for back-and-forth dialogue that may not otherwise occur in a more structured formal meeting. It also provides a prime opportunity for tacit knowledge exchange. This can be articulated as—

Proposition 1: Casual conversation in the workplace leads to positive work-based ideas.

Casual conversation allows for a non-linear flow of information, as conceptualized by the framework in Figure 1. Not all dialogue will vacillate between personal and work-related topics as depicted, but conversations often alternate between personal/social and work-related subject matter, as well as hybrids of the two, several times during an exchange. An initial social exchange may serve as a precursor for subsequent a work-related exchange. This model illustrates that propensity for this type of discussion to generate tacit knowledge exchange, which in turn leads to new idea creation.

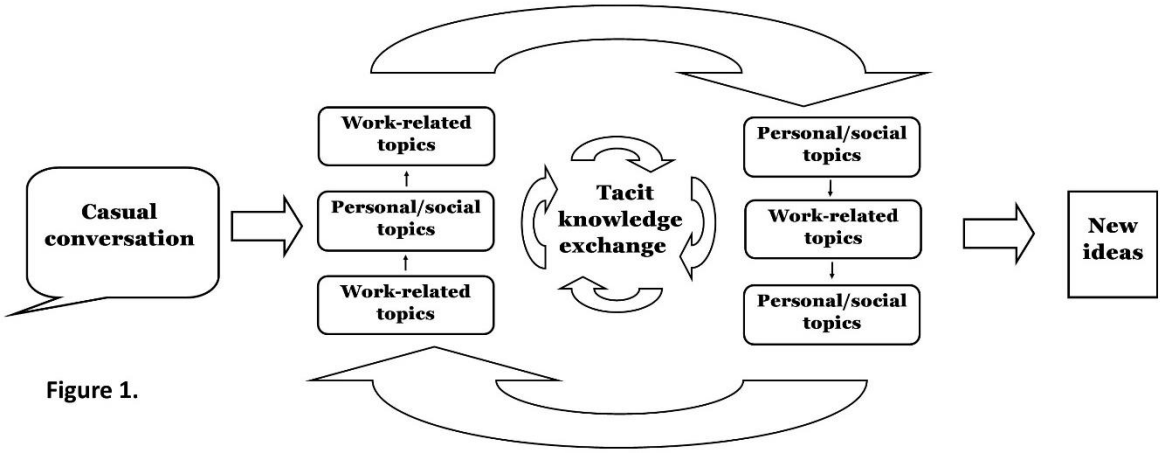


Figure 1.

An important consideration for this model is that casual conversation must be defined as natural, unforced discussions. Opportunities to foster such conversations can, however, be created without impeding the effectiveness of such conversations, if allowed to occur naturally. Individuals must be willing participants in such conversations for peak idea generation to occur.

Conversely, formal work-related conversation is highly linear, as depicted simply in Figure 2. Participants generally have pre-conceived expectations regarding the information sought. Once the seeker receives the information, the exchange typically ends, leaving little room for additional discussion, creativity, or idea generation.

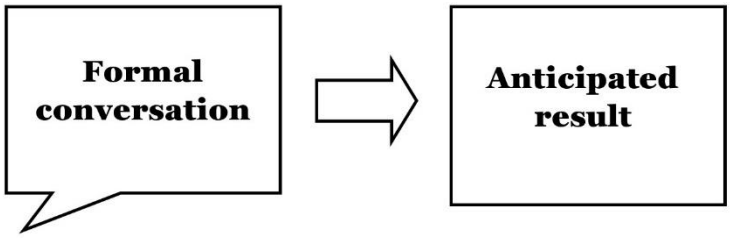


Figure 2.

A university archives professional acquainted with the author describes an experience that began with a casual conversation in a social setting which led to a ripple effect of professional ideas and connections. A community member came to possess a 1949 university football program. Through casual conversation with the community member's neighbor who worked for the university, it was suggested that the program be digitized for archival purposes. The university employee facilitated the preservation of the document and through further casual conversation and discovered a disconnect in information sharing between the university library and athletic area. The archivist shared that the athletic department has many past programs in its possession, but it has not shared them for digital scanning and archiving purposes. The university employee shared the scanned program with the athletics area as a mechanism to start the conversation about future sharing of interesting artifacts between athletics and archives.

360 Degree Model of Ideal Workplace Conversation

Casual conversation about ongoing work projects can also be a helpful tool that fosters the free flow of ideas. An additional model within this casual conversation framework, the 360 Degree Model of Ideal Workplace Conversation, asserts that ongoing casual discussions among co-workers about their current projects should not only be permitted but also encouraged for the overall health of the organization.

The circular model places all members of the team equally as contributors to this information and idea sharing construct and does not give more power to higher ranking individuals. The discussion of current work information in a casual manner allows co-workers to test out ideas on one another, get helpful feedback, and have enough knowledge about departmental activities to step in and assist when needed. One important caveat could make implementation of this model difficult in certain settings. This 360 Degree Model works best when leaders are more concerned with the greater good of the organization and outcomes than personal advancement. Additionally, supervisors must not be threatened by the success of the members of their team. Fearing the success of subordinates is catastrophic to organizational performance. In a less than ideal state, the supervisor will remove oneself from the model, so sharing will be limited to lateral colleagues to the extent to which this is permissible or can be discretely achieved.

Casual conversation can also serve as a backstop to preventing negative outcomes. Normally there are official channels for the dissemination of important information, but those channels can break down. Free flowing casual conversation can in some cases fill that void, which can be articulated as—

Proposition 2: Casual conversation in the workplace can help organizations avert serious problems.

Casual office banter is not the primary way critical information should be transmitted. However, an environment which allows for the free flow of ideas and information can lead to conversations where critical information is revealed that allows crises to be prevented. Two examples may better explain this proposition. Two additional examples from a United States university better illustrate this proposition.

Case #1. A university administrator did not receive critical information about a new travel policy that would dramatically affect the way she prepared for students to attend an off-campus class. The administrator was omitted from the email that officially disseminated the information about the policy's existence as well as the significant increase to the paperwork that would result. It was through casual conversation in which another university administrator mentioned a new travel policy that made her aware that a policy change had been made. This conversation, which took place less than 24 hours before the class was scheduled to begin, allowed her to set into motion steps to secure the newly required documents from all the students enrolled in the class. Had this casual conversation not occurred, the class would have taken place without this paperwork in place, putting her, the students, and the university at risk.

Case #2. A casual conversation between a university staff member and a faculty member prevented 176 graduating student names from being omitted from the commencement program in 2017. One Friday afternoon in late 2017, the faculty member, referred to here as Henry, stopped to say hello to a staff member, referred to here as Sarah. Having just proofread the program for the upcoming commencement, Sarah remembered reading that one of Henry's students was graduating, so she congratulated him. Henry thanked her but indicated he had three students graduating that term. This led to Sarah contacting the university's records department, which had provided the list, to do some

additional research. Records determined that names had been omitted in error, provided a new list, and an updated program was designed and printed in time for the ceremony. Those directly involved in the situation have assessed it multiple times and determined that a single casual conversation is the only event that led to the accidental discovery of the error.

Proposition 3: Casual conversation in the workplace leads to increased work engagement, job satisfaction, and productivity, which benefits to the organization and the individual.

A key factor for employees engaging in casual conversation in the workplace is the extent to which the organizational culture supports such behavior. An important component in this proposition borrows from Gatekeeping Theory (Shoemaker, Eichholz, Kim, and Wrigley, 2001). In the case of Casual Conversation Theory, gatekeepers set the tone for office dynamics. These forces determine the extent to which engaging in casual conversation is viewed as acceptable behavior. Feeling comfortable engaging in casual conversation is necessary for individuals to converse freely. Such dialogue should never be forced, but environments can be created to foster it. A study of firefighters in a large US city suggests that sharing meals may lead to better work-group performance (Kniffin, Wansink, Devine, and Sobal, 2015). Firefighters interviewed in the study shared that they believe this commensality plays a role in improving their function as a team.

A British study that examined more than 500 trading establishments suggests that productivity was enhanced by facilitating knowledge sharing through face-to-face communication (Salis and Williams, 2010). Social Presence Theory and Media Richness Theory, which both point to face-to-face communication as the channel richest in interpersonal clues, have relevance especially in times of organizational uncertainty. This is especially helpful when discussing confidential or sensitive workplace situations, as discussed by Kupritz and Cowell (2011).

Bakker defines work engagement as “an active, positive work-related state that is characterized by vigor, dedication, and absorption” and job satisfaction as “a more passive form of employee well-being” (Bakker, 2011, p. 265). Work engagement may be as a strong predictor of job performance, which serves as both an individual and an organizational benefit. Engaged employees often experience positive emotions, such as gratitude, joy, and enthusiasm; they also experience better health (Bakker, 2011). Furthermore, research shows that engagement is contagious, and engaged workers transfer their engaged state to others in their immediate work environment (Bakker and Xanthopoulou, 2009).

Existing literature analyzes the types of informational communication in workplaces by distribution channels. Benefits of direct voice communication have been identified in more structured settings. Casual Conversation Theory illustrates the opportunities that exist for tacit knowledge sharing and new idea creation in a less structured manner. There is a need for further exploration of the potential benefits under this framework. More engaged and satisfied employees are more likely to remain with a company, as discussed by Kundu and Lata (2017). Their proposed conceptual model of engagement begins with a supportive work environment, rooted partially in peer group interaction, which leads to organizational engagement and employee retention (Kundu and Lata 2017). The freedom to participate in casual conversation may be a mechanism to not only generate new ideas but also engage and therefore retain talented workers as well as their hidden tacit knowledge.

Conclusion and Future Directions

Casual conversation in the workplace is a powerful tool in informal learning, the exchange of knowledge, particularly tacit, and in the construction of individual identities and realities. It is a natural part of life, both inside and outside of the workplace. People invest their time, talent, and energies into improving their organizations. Empowering individuals to talk freely allows for the sharing and cultivation of new knowledge and ideas, which can benefit them in terms of increased productivity and job satisfaction, which also benefits the organization. Happy employees remain a part of organizations longer, which allows companies to also retain the tacit knowledge that resides in the minds of workers and collectively accounts for most of the organization's knowledge.

Extant research suggests that solutions to problems can occur during casual conversation between workers (Koester, 2006). Though conversation can vacillate between business and social talk, it is through these meanderings, when people feel comfortable to chat openly, a potential exists for creative ideas to emerge. Creating an environment where people are trusted and valued allows conversations to move towards "dialogue as real meeting" where new ideas and real possibilities for organizational and personal growth can occur (Eisenberg et al, 2007). It is in this space that people make deeper, more meaningful human connections that encourage further encounters and idea sharing and creation. Structures of different industries impact the likelihood that casual conversation will be permitted or encouraged. Certain fields, such as higher education, might be more willing to foster climates that are conducive to informal interactions. However, even within more rigid settings, such as factories, opportunities for casual conversations exist within limited times or locations (i.e. coffee or lunch breaks). These differences should be explored. Individual characteristics, such as gender, age, and rank can also impact the practice of casual conversation. The proposed model for ideal workplace communication is based on the notion of suspending rank and viewing others as equals, which may not always occur in practice. Open and honest communication also has the potential to lead to negative consequences, particularly for those in lesser positions of power, depending on the organizational climate.

Research suggests that up to 70% of learning happens informally, and informal learning leads to better retention of knowledge gained (Leslie et al, 1997). Since most informal learning is self-directed, casual conversation may be an important contributor to the learning process. Allowing employees to self-assess learning needs and empowering them to seek out new knowledge creates an empowering culture that will lead to increased motivation and performance.

The number of Americans working full-time from home has risen from 5.0% (2016 Census data) to 5.2% (2017 Census data), and additional workers may opt to work remotely on occasion, when organizational policies allow such affordances. The removal of shared physical space between workers had led to the emergence of virtual Communities of Practice (CoP), digital platforms designed to foster collaboration (Mavraki and Akoumianakis, 2014). Continued research into how CoP can support both interpersonal dialogue and information-processing may be increasingly important with more people working from home and conducting business globally (US Bureau of Labor Statistics, 2017).

Casual conversation is a critical component to the processes of learning and knowledge generation, which are inexorably linked. “New knowledge always begins with the individual,” writes Nonaka to describe how the spiral of knowledge begins (2008, p. 10). However, ideas must be shared in order to lead to higher levels of knowledge. “When employees invent new knowledge, they are also reinventing themselves, the company, and even the world” (Nonaka, 2008, p. 15).

Testing this theory may be challenging, especially since tacit knowledge is not always recognized by the individual who possesses it. However, developing a research protocol that combines quantitative and qualitative methods has the potential to shed light on the potential benefits of casual conversation, both for individuals and organizations. Casual Conversation Theory and the related 360 Degree Model of Ideal Workplace Conversation aim to articulate a powerful way for employees to contribute to organizations when they are empowered to freely converse with one another in the workplace.

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Digital Space, Ecology, and Composition: Translingual Online Writing

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Abstract

As a hearing editor and a deaf writer, we share our personal story about how we have developed our own communication that bridges and connects different cultures, languages, and modes of communication through online writing sessions for the doctoral dissertation. We seek to discover best practices for this hybrid modality by investigating how and why our online writing experience was so successful. By viewing this writing situation as an ecology of composition, we were able to efface so-called "barriers" to communication such as linguistic and cultural differences, and differences in ability. This research has applications for any cross-cultural or cross-ability writing situations.

Introduction

Posthumanism encourages us to look at composing situations as sites of distributed agency, not just between reader and writer, but shared with objects, systems, and ecologies (Barrett-Fox & Clegg, 2018). Theories of ecologies of composition and rhetorical ecologies (Edbauer, 2005; Syverson, 1999) provide a framework to understand the role of technology in mediating writing situations. The ecological perspective is not a different methodology or theory, but rather an attempt to *see differently*. Ecological perspectives on writing take into account complex adaptive systems theories to explore attributes, processes, and relationships that occur while writing. By adopting the ecological perspective, we paid attention to all aspects of our ecology of composition, from room design to software applications, to personal interactions to linguistic and cultural differences.

As a hearing editor, Philip Hayek, and a deaf writer, Manako Yabe, we share our personal story of meeting over the course of nine months to work on editing a doctoral dissertation. The editor is a native English user. The writer is a native Japanese user and uses English and American Sign Language (ASL) as non-native languages. With these linguistic differences also come cultural differences, not only between American and Japanese cultures, but also between Hearing and Deaf cultures. We faced a unique communication setting that involved different cultures, languages, and communication technologies. We attempted to apply a strategy of universal design during our encounters, and we have developed our new hybrid communication modality through the use of Google Docs, which combines both a word document and real-time text chat. We edited the same document simultaneously, while explaining our edits and asking clarifying questions in the chat feature in the Google Doc. In addition to this online space, we were also meeting in person. The writer worked on a laptop while the editor worked on a desktop with a 27-inch screen that allowed both of us to view the Google Doc and the chat on the same screen.

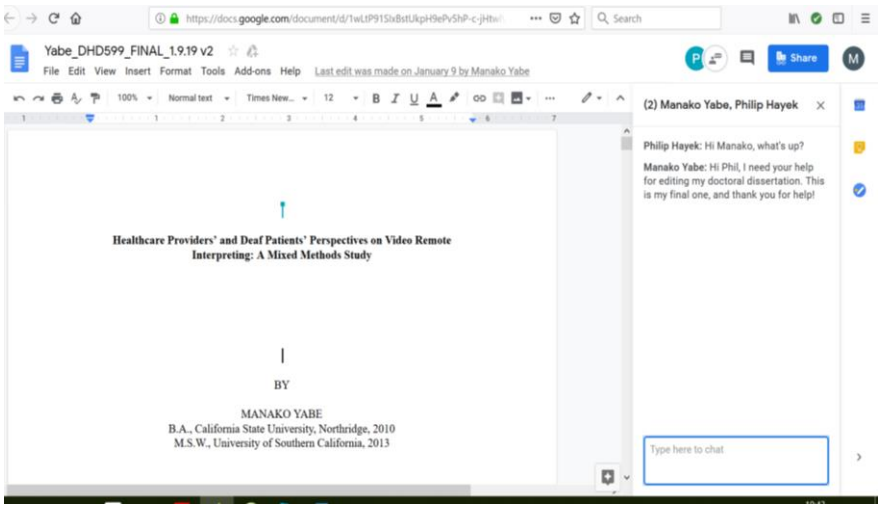


Figure 1. Google Doc - An example of doctoral dissertation writing

Our experience can be called, "Translingual Online Writing," an idea that came from Horner, Lu, Royster, and Trimbur (2011)'s translingualism, which recognizes and develops an understanding of cross-language encounters between editors and writers - which exactly applies to our translingual writing experience through Google Docs. However, we noticed a gap in Horner, Lum Royster, and Timbur (2011)'s translingualism, in which the authors define a difference in language, "not as a barrier to overcome or as a problem to manage, but as a resource for producing meaning in writing, speaking, reading, and listening" (p.303). In other words, this theory focuses on only spoken languages, but not sign languages. We argue that including "signing" is an important addition to this scholarly statement. To fill the gaps of Horner, Lum Royster, and Timbur (2011)'s translingualism, we looked for theories in rhetoric and composition that could inform what we were experiencing in practice. The purpose and the goal of our presentation is to share our story and to explain how and why our online writing experience was so successful.

Ridolfo and Devoss (2009)'s rhetorical velocity is a theory that can demonstrate how the text and discourse move through time and space when mediated by the technology we use. Yet, this theory focuses on the writing and publishing process through media, but not online collaborative writing. We were more interested in the rhetorical canon of invention, rather than delivery. Elbow (2012)'s time and space also can allow us to recognize kairotic moments when we interact with each other in virtual and digital spaces. However, the theory discusses the writing process in physical space, but not virtual space. In our unique writing situation, the editor, Hayek, and writer, Yabe, met both physically, in person, while also simultaneously occupying a virtual space. We were in two places at once. Edbauer (2005)'s rhetorical ecology allows us to explain how social fields can encompass physical and environmental factors that can affect the writing process. Access to technology was one example of a social field, and without this access, we would be unable to communicate and collaborate online. Looking at how the social fields impact the composing process helps us understand why our online writing was successful. Yet, this theory mainly discussed the rhetoric of health and medicine, and we were interested more in theories of composition.

Recently, Gonzales (2018) proposed her model, *A Revised Rhetoric of Translation*, which helps us to identify language transformation and what we see taking place during translation moments, but also how these visible practices are affected in histories and experiences of communities. Although her model focuses on the language transformation among multilingual "speakers" such as Google

Translation, we argue to add the statement that this language transformation should include other multilingual "signers," in addition to other digital writing, such as Google Docs and Google Slides.

Furthermore, Propen (2012) explored "visual-material rhetoric" based on her studies of space, the body, and materiality, by adapting from Michel Foucault's theory of heterotopias with Carole Blair's theory of material theoretic. In a similar situation, we use Syverson's *Ecological Matrix* to describe something more than a "one-way approach" to the linguistic dimension, visual-material dimension, but in addition to physiological, social, spatial, and temporal dimensions to put the whole story together in our translingual writing experiences.

In addition, we use Donella Meadows' *Thinking in Systems: A Primer* (2009) to broaden our understanding of our writing situation as a complex system, and also Edwin Hutchins' *Cognition in the Wild* (1994) to understand how human cognition functions in systems. For example, Meadows encourages her readers to pay attention to the behaviors that emerge in a system to deduce the purposes of the system. Furthermore, she argues that the system can cause its own behavior. Originally, we wanted to know how to use and control the technology in our writing situation, rather than how to identify the behaviors that the system encourages. The feedback structures that are built into the Google Docs software encourage constant and overlapping mediation between the writer and the editor, and eventually efface differences in language, culture, and ability.

Syverson's Ecology Matrix

We use Syverson (1999)'s understanding of complex systems and ecological systems to analyze our unique writing situation. Because we met simultaneously online and in person, the additional feedback in the form of body language, confused or affirmative facial expressions, and the ability to recognize when either of us was typing to compose a comment created a writing situation that resulted in the kind of ecology that Syverson (1999) explains as self-organizing, adaptive, and dynamic. For example, a simple affirmative nod of the head signals to the other person that we agree on a particular edit. Conversely, a confused look and a shrug of the shoulders signals that we need to combine our efforts to tackle a larger edit, such as restructuring an entire paragraph. In the chat feature we can explain our confusion, and these layers of feedback contribute to the coherence of the process and the document.

Our composing situation demonstrates the four attributes of an ecology outlined by Syverson: our thought process was *distributed* between writers, and between writers and technology; the process *emerged* as self-organizing as the different technologies mediated communication and encouraged certain behaviors; these behaviors resulted in written communication that *embodies* our physical situation of meeting in a digital space; and the knowledge produced is *enacted* through the technology we used.

We analyze our unique ecology of composition using the five analytical dimensions of complex systems (physical-material, social, psychological, temporal, and spatial) provided by Syverson (1999), and conclude that the physical-material dimension has changed to include shared digital spaces, and these structural changes mediate conflicts or differences that might arise in the other dimensions (See Figure 2). With this in mind, we can develop and design best practices for building ecologies of composition that optimize the technology in the physical-material dimension to better serve and mediate the other dimensions in play. Ecologies are made up of complex systems, and complex systems are never in equilibrium, but *dynamic* equilibrium (Meadows, 2009, p. 21). They are constantly changing as they are dynamic, adaptive, and self-organizing. With this in mind, trying to overlay an analytical matrix onto any

writing situation will always be an attempt to hit a moving target. Nonetheless, our interpretations of our composing process based on an understanding of ecologies of composition yielded exciting conclusions. In the next section, we give our individual interpretations on Syverson's ecological Matrix as the perspectives of the hearing editor versus the deaf writer.

	Physical	**Social**	**Psychological**	**Spatial**	**Temporal**
Distribution					
Embodiment					
Emergence					
Enaction					

Figure 2. Syverson's Ecological Matrix (1999, p.23)

Theoretical Application

According to Syverson (1999), the four attributes of an Ecological System include distribution, emergence, embodiment, and enaction. Distribution aligns with posthumanism in that it recognizes that physical and cognitive processes are divided and shared among agents, to include digital technology. Emergence refers to when self-organization arises globally and spontaneously in these networks, as a process of coordination. Embodiment refers to how the writing is dependent on the physical experience. Enaction refers to how the activities and experiences bring forth the textual world as we are writing it (Syverson, 1999). Our experience was heavily mediated and distributed through digital technologies and digital spaces, leading to a surprising self-organization between editor and writer that resulted in the invention of not only textual discourse but also of a new, shared role of reader in the composing process. Following Meadows' argument that "purposes are deduced from behavior, not from rhetoric or stated goals," (Meadows, 2009), our emerging behavior reveals a purpose of the system: the system intends for the human agents to inhabit a specific role in the composing process.

In the beginning, we tried to fill in all of the boxes in Syverson's Ecological Matrix (Figure 2), but we found it was challenging to put all of the information in a firm matrix. It makes sense that each field of the matrix would necessarily be dynamic and adaptive, and resist being placed in a static table. Nonetheless, as an exercise we made an attempt to define the 5 dimensions of analysis as they apply to our unique writing situation. Beginning with the physical-material, we immediately recognized how technology has expanded this dimension. The physical-material dimension includes the physical computers we worked with (screens and keyboards), but now we must take into consideration the digital, online environment of the Google Doc. The expansion of this physical-material dimension has a tremendous impact on the ecology as a whole. Being able to exist in this digital space allowed the writer and editor to overcome social and linguistic obstacles in the physical world.

As for an example of the social dimension, we found that the writer's dissertation language was rooted in Deaf culture, which general audiences might not be familiar with. This could have potentially led to impasses, if not for how the technology allowed us to meet in the digital space. The deaf writer was able to ask for feedback to the hearing editor about hearing culture and to clarify the message to the audience. For instance, the deaf writer was able to explain in the chat function that capitalized Deaf people refers to people who belong to the Deaf community and use American Sign Language, while non-capitalized deaf people refers to people who do not belong to the Deaf community. The editor might have understood the technique of capitalization, but without the chat function in the digital space he would not be aware of the impact and significance of these distinctions within the Deaf community.

As for an example of the physiological dimension, our thoughts were indeed affected by technology. By typing what we said, we experienced different cognitive processes than when we speak or sign. The writer sometimes typed messages with mixed grammar of Japanese, American Sign Language, and English. The editor often used idioms and references that needed further clarification, all of which was filtered through the physical act of typing. Our cognitive processes were different when typing, speaking, and signing.

As for an example of the spatial dimension, the editor had a 27-inch desktop computer, and the writer had her own laptop. We met in person and used online writing technology. We met in person and shared body language and facial cues, while communicating virtually on two screens. We were able to access the space to see the document and real-time chat through Google Docs in addition to face and body expression to engage discussions. Without both digital and physical space, how could we access the technology, deliver messages, and engage discussions?

As for an example of the temporal dimension, communication by writing back and forth requires time and space. Communication with an interpreter might be efficient, yet, it would require lag-time and sufficient space to place, and it might be difficult to assess a writer's writing style in English, which is different from verbal language in ASL. In addition, we would have to find a regular interpreter for the sessions ahead of time Communication by Google Docs was able to mediate these limitations, using real-time chat, virtual space, and direct assessment in the doc. Google Docs encourages constant and quick reactions within the system.

However, we found it was challenging to explain how our experience demonstrates the four attributes of an ecology. We shared this concern with Syverson, and she stated that the application of these attributes is only one approach to using complex adaptive systems theories and ecological perspectives. Meadows (2009) offers some other approaches and attributes of complex systems (M. Syverson, Email Conversation, 2019, July 10). Thus, we found that it was necessary to explore a new theoretical approach beyond Syverson's ecological matrix. In the next section, we share our perspectives how Google Docs was beneficial for our online translingual writing experiences.

The Benefit of Google Docs

The Editor's Perspectives

Before we began working on the writer's dissertation, we communicated with each other through an interpreter. This mode of communication was generally successful, if not without issues of mediation. Every now and then, a message would get lost on its way from the editor to the writer, or vice versa. The interpreter would then interrupt the discourse to mediate and try to recover the lost message, either by

asking clarifying questions of the editor, or by signing to the writer. Some messages were lost due to differences in cultural references, idioms, and figures of speech. These differences needed to be mediated by the interpreter to reestablish stasis and move forward with the discourse. These differences arise in all communication and must be mediated by the interlocutors, but our situation differed in that it relied on a physical, human interpreter. Arguably, this human interpreter represents the most advanced and practical technology with which to mediate communication between the writer and the editor. And it worked well, even if the interpreter was somewhat exhausted by the end of our conversations. We had many engaging and interesting conversations about the writer's 's dissertation and how theories of rhetoric apply to her research, all facilitated by the interpreter.

The writer's 's dissertation looked at the preferences and sentiment surrounding Video Remote Interpreting (VRI) in health care settings for Deaf and Hard of Hearing (DHH) patients. Generally speaking, the DHH patients and health care professionals preferred in-person interpreters for reasons ranging from sentiment to reliability of the technology. This makes sense to the editor, as he, too, had seen how well we communicated with each other via in-person interpreter. Communicating through this interpreter, we had developed a strong professional relationship with overlapping research interests. So, when the writer emailed the editor to ask if he might be available to meet in person and help proofread and edit her dissertation he jumped at the chance, without really giving any thought to how we would communicate during that process without an interpreter. Having used Google Docs before for collaborative writing projects, he knew that they would be able to have a shared view of the document and be able to use the chat function.

We met in person, and we "met" in the Google Doc over the course of 9 months while editing and finalizing her dissertation. We talked about everything from our own personal philosophies to the suggestions her dissertation committee had just given her. We edited sentences and whole sections together simultaneously, all the while explaining our edits and concerns with each other through the chat function. She explained the taxonomy she was using in her dissertation that defines DHH culture and communication practices, in order that the editor could suggest how she might make those distinctions clear to the audience. The editor made suggestions for how her research intersected with rhetorical theory and how those theories might enrich her discussion. For over 9 months we worked on this dissertation, communicating, and writing and editing together for hours on end, all without the interpreter.

Syverson's theory of an ecology of composition uses complexity theory to offer a framework for analyzing this unique writing situation. This theory helped us to answer the question of how our cognition and agency could be distributed rather than individual, and what role the technology plays in this distribution. Distribution and emergence are the attributes of an ecology that our experience illuminated the most. The distribution of the activities and experiences of this writing situation was not totally a conscious effort by the editor and writer. Our roles of writer and editor had already been established when we met to work on the document, but in practice we both embodied the role of *reader*, searching the document for mistakes or lapses in clarity, or responding to what Manako's committee had requested or pointed out. The role of reader in our situation best describes our actions. While working together inside the document, we inhabited this same role, or perhaps we shared the role of the reader. Our behavior emerged as highly organized, though not controlled, or absolutely determined by any particular characteristic of the situation. Thus, our writing situation fits neatly within theories of complex systems, which argue that patterns of activity emerge from random instinctual behaviors of agents within the system (Kretzschmar, 2015). Our instincts to act in the role of reader

emerged to organize the patterns of activity in the writing situation, and these behaviors were reinforced by the larger ecology.

Our discovery of our roles as readers led to the work being shared, not divided. The attribute of distribution in our particular ecology of composition does not mean division or allotment, but rather a shared intent. Together we located problem areas, chatted about what was wrong and how to fix it, and sometimes we would even edit the same sentence simultaneously. This emerging self-organization relied heavily on the technology that was able to mediate the four attributes of an ecology of composition: distribution, emergence, embodiment and enaction of our writing situation.

With digital spaces offering a stable and shared physical material dimension, we were able to find stasis in the social dimension by using the digital space of the chat feature to talk about our backgrounds, families, hobbies, interests and everything in between. While editing we would explain our concerns and edits in the chat as well, engaging in meta-cognition in the psychological dimension. Any differences we have in these five dimensions, when applied to our writing situation, were mediated by such a comfortable and shared physical-material space. The digital spaces that now comprise the physical-material dimension in our writing situation provide a stable footing that reinforces behaviors that lead to spontaneous self-organization.

McComiskey argues that the decentered and distributed nature of information increases access but can decrease coherence and continuity (McComiskey, 2015), and he argues that nonlinear document structures increase flexibility but decrease control of purpose and intent. But Meadows (2009) argues that purposes in a system are knowable through the behaviors encouraged in that system, rather than from stated goals, and the digital spaces shared by digital natives reinforce behaviors that mediate and efface differences. In our case, the digital space encouraged “random” instinctual behaviors that led to our embodiment of the role of reader, to include the actions of reading, writing, editing and discussion. This resulted in what Meadows (2009) calls dynamic equilibrium. The definition of reader in this context is meant to try to explain how the affordances of digital spaces informs the intersection of posthumanism and complex systems theory. Barrett-Fox and Clegg notice that writing situations exist in an ambient informational environment (Barrett-Fox & Clegg, 2018) that can either be a flattened information environment or a hierarchical information environment, and that a posthuman awareness in these environments means “a sense of agency distributed between actors, objects, technologies and environments (Barrett-Fox & Clegg, 2018).” The digital space of a Google Doc offers a flattened information environment and seamless distribution of agency that results in the participants becoming shared and equal readers. The “writer,” and the “editor,” are encouraged by the technology to embody this new and shared role.

The physical and cognitive processes in an ecology of composition are distributed, and the online digital space that now constitutes the physical-material dimension of analysis in these ecologies allows for physical and cognitive processes to be shared and mediated, not divided. Complex systems theory is applicable to every discipline from computer science, to evolutionary biology, to theories of composition and rhetoric. Complex systems theory, or complexity theory, helps us understand how random interaction of large numbers of components can result in the emergence of stable patterns without central control (Kretzschmar, 2015). In these active and dynamic systems, such as an ecology of composition like the one that we shared, information is exchanged, feedback given and received, and behaviors emerge and are reinforced. The stability, or spontaneous self-organizing, or dynamic equilibrium that resulted from our unique ecology was this shared role of reader that embodies every

action and responsibility of reader/writer/editor but claims none of it. Every action and responsibility of reader/writer/editor is shared by this new role of reader, or perhaps, distributed reader.

The Writer's Perspectives

As a writer who has been to writing centers for nearly a decade, the writer has used many different communication tools to work with deaf tutors and hearing tutors. When the writer worked with deaf tutors who were fluent in ASL, she communicated in direct ASL. When she worked with hearing tutors who were non-signers, she used an interpreter, or she used a laptop and iPad to type for communication. As a deaf tutor, she had an opportunity to work with hearing writers, and she used an interpreter for in person tutoring, and used the text chat messenger for online tutoring (Yabe, 2018). When she started to write the doctoral dissertation, she needed to look for an editor who was familiar working with writing majors and also experienced in doctoral dissertation writing. In addition, her dissertation focused on deaf patient-provider communication with VRI, so she needed an editor who was hearing, so that the editor could provide me hearing perspectives to balance the perspectives of Deaf and hearing cultures.

The writer was able to find her editor for editing the doctoral dissertation. Before we started working, we used an interpreter. The interpreter had told the writer that the editor used different language ranges, idioms, and jokes. Yet, she could not see the different ranges without transcribing, because the interpreter provided the concept of the information, but not what actually was said in exact English grammar order in verbal language. When the writer figured out a communication tool and found Google Docs that combines documents and text chat, she finally understood the interpreter's explanation about his language styles that she could not see through ASL translation. Some languages were sometimes impossible to translate into ASL, and vice versa. For example, for translating English into ASL,

> "Publish or perish" in spoken English
>
> "PUBLISH (or) P-E-R-I-S-H" in ASL (transliterating)
>
> PERISH (or) PUBLISH in ASL

The interpreter had to transliterate instead of signing the words in ASL, because PERISH and PUBLISH are different signs, which could miss the meaning of idioms. So, the writer had to ask repeating and explaining the meaning of the idioms. And also, she had to figure out why the idioms were used for a specific situation. As for another example in translating ASL into English,

> "WARM-BODY (or) IN-PERSON?" in ASL
>
> "Warm body interpreter or in-person interpreter?" in spoken English

When the writer interviewed with DHH patients, some DHH patients used "warm-body interpreters" which means in-person interpreters. So, she asked the editor, whether hearing people also use and understand the meaning of "warm-body interpreters." This term was a specific language for the Deaf community. Google Docs helped the writer to communicate directly, identify language uses, and learn new languages.

Beyond the Sessions

We began recognizing that Syverson (1999)'s theory could apply to not only our sessions, but also the writer's own personal communication experiences by using Google Docs in different situations. For instance, as a student, the writer had seen that hearing students also use Google Docs for group projects, like bringing their own laptops, developing slides or papers, typing, and talking in real time in the classroom and outside the classroom. The writer also used this Google Docs for meetings with her faculty members or colleagues. The writer has also seen that her academic groups used Google Docs for signing up for book reviews, and her professors use Google Docs to display their discussion notes during the lectures in the classroom. In addition, the writer used the real-time captions on Google Slides to make the information accessible for everyone at conferences, which is also beneficial for classrooms (Ditch That Textbook, 2018). Thus, we shall bring up other examples from Syverson (1999)'s *Ecological Matrix.*

As an example of the physical-material dimension, Google Docs could keep track of the real-time discussions, which became a transcript after online writing meetings, compared to watching an interpreter and taking notes at the same time, in which a deaf person could have missed some keywords during the discussion.

As an example of the social dimension, Google Docs could use speech to text. If we carry an app of Google Docs on smartphones or laptops, a hearing person who is a non-signer could use speech to text on Google Docs, while a deaf person could type on Google Docs. Sometimes, speech to text does not translate accurately or requires lag-time, like YouTube automatic captions (University of Minnesota Duluth, n.d.). Yet, it could be at least useful for a specific situation, such as if a hearing person were unable to type. But of course, it would depend on good connectivity and available technology equipment, which also applies to the physical-material dimension.

As an example of the physiological dimension, a deaf person might not feel comfortable using an interpreter when discussing private matters, even though the interpreter has the Code of Professional Conduct for confidentiality (Registry of Interpreters for the Deaf, n.d.). For example, the writer felt awkward using a regular interpreter for a specific meeting with her faculty member. In such a situation, she used Google Docs to discuss her private matters. Meanwhile, having a third person or without a third person for a specific discussion can affect our thoughts, word choices, and what information we share to discuss the topics. In addition, if a faculty member had used typing rather than speaking, the faculty member may not share the thoughts than what they actually talked. This was a conflict to balance the shared information.

As an example of the temporal dimension, the writer had used Google Docs as an alternative accommodation, such as unexpected and last-minute meetings. It was often difficult to find an interpreter in short notice because it requires one week ahead to request an interpreter. It worked when staff and the writer had their laptops or computer readily available and internet access.

As an example of the spatial dimension, Google Docs was a flexible communication tool to meet in person or virtually. Either a deaf person or a hearing person join a group discussion virtually, we are able to access equal communication, in addition, we would not have to worry about public transportation access to meet in person, or we could meet virtually at the late evening or weekend.

Access or Accessibility?

When we share our personal interpretations on this theoretical application on our translingual writing sessions and outside sessions, we began recognizing that Google Docs is more than an accommodation. There is no charge, compared to interpreting or captioning services, and it is direct communication, though it does rely on accessibility to the technology. Yet, it is sometimes not accessible for screen readers (Pennsylvania State University, n.d.).

So, Google Docs should be called, rather than an accommodation, a communication tool, or an assistive technology for the DHH community. But if hearing writers use Google Docs for communication, we cannot call this as an accommodation or assistive technology. For example, if we consider a deaf person as a disabled person and we use Google Docs, we would call this an accommodation or assistive technology. Yet, if we consider a deaf person as a linguistic minority person (Lane, 2005), we do not use Google Docs as an accommodation, but we use Google Docs as part of the "language" communication. For example, we may call it "accessibility" when referring to sign language interpreters for deaf people, but we also may call this "access" when referring to a spoken language interpreter for hearing people. We may interpret that "accessibility" is linked to disability rights, while "access" is linked to non-disability rights (Rosen, 2019). Therefore, it depends on our attitudes how to take Google Docs as "access," "accessibility," or a new word - "scaffolding" (M. Syverson, Personal Communication, August 13, 2019).

Furthermore, Google Docs also could be beneficial for diverse student writers: International student writers who are eye learners and study English as grammar translation methods (Nakamaru, 2010); multilingual language student writers who are not comfortable to go to writing centers due to English as a second language (Khan, 2015); military student writers who are also not comfortable to go to writing centers due to seeking-resource as a weakness (Gairott, et al., 2017); writers with disabilities who have limited access to writing centers (Daniels, Babcock, & Daniels, 2015); and non-traditional student writers who feel awkward to go to writing centers due to stereotypes and ageism (Werner, n.d.). Therefore, we propose to explore a possible new theoretical approach to describe a unique technical communication and its transformation of Google Docs.

Conclusion

To end, we conclude that Syverson's *Ecology Matrix* helps us to understand why our online writing process was so effective, in addition to discussions beyond these theories and outside of sessions. By applying the ecological perspective to our writing situation, we have attempted to enumerate different combinations of people, differences, abilities, and technologies that might adapt well to the behaviors and roles that are encouraged in this complex system. We propose questions to ask our readers. What should we call this way, or name or label it, to avoid getting mired in the taxonomy of disability? How does our experience extend or expand Syverson's theory of the ecology of composition? Does our experience alter or inform or change the theory in any way? Does the theory change our understanding of our experience or interaction in any way? Does the theory offer any insight into how we might improve our communication situation? We also welcome readers' feedback and input for our theoretical applications to online writing sessions.

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