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Editors' Introduction

Welcome to the 28th volume of the Micronesian Educator, published through the School of Education at the University of Guam. We are delighted to provide you with many interesting and insightful articles. This volume consists of three sections: (i) research papers; (ii) critical essays; and (iii) book reviews.

Section One: Research Papers

Section One of this volume contains five research papers. The **first research paper**, written by Cynthia Cabot and other coauthors, is titled "Developing Effective Culturally Specific Sexual Misconduct Policies and Prevention Strategies for Campuses in Micronesia." In their efforts to empower communities in the Micronesian region, the authors have made evidence-based attempts to identify challenges and issues in delivering culturally competent services to students in higher education. They address the following question: How can campus-based programs effectively develop policies on sexual misconduct? The Administrator-Researcher Campus Climate Collaborative (ARC3) Survey was administered to students at seven campuses throughout Micronesia. The results indicated vulnerability among women and non-heterosexuals, and among those self-identifying ethnically as Chuukese or Yapese. The authors argue that developing culturally competent campus policies and approaches to prevention, to address sexual misconduct in Micronesia's college campuses, is imperative.

Classroom teachers—and those teaching English as a Second Language (ESL) students—face many complex challenges in class daily. How best to run and manage ESL classrooms is an ongoing issue. In this regard, The **second research paper**, by Lynsey Lee, titled "Should ESL Teachers Push-In in Guam?," promotes the local community's awareness of the Common Core State Standards (CCSS), and of what implementing these standards within ESL education in Guam will require. The author compares the situation in Guam with areas in the mainland United States that have applied the CCSS to ESL education. The author provides an intriguing discussion regarding the roles of ESL teachers in the Common Core era; and argues that the current circumstances of Guam, with its high percentages of ESL students and shortage of qualified ESL teachers, have not prepared schools to make optimum use of this leading ESL instructional model.

The **third research paper**, by Leslie Aquino and Hyunju Oh, titled "Successful Launching Undergraduate Research in Mathematics at the University of Guam," reports an implementation of undergraduate research experiences in mathematics at the University of Guam (UOG), with funding from the National Science Foundation, during the summers of 2018 and 2019. Eleven UOG students and 6 local high school students participated in group projects. Conducting research as a high school or undergraduate student provides unique experiences that strengthen academic skills and potential. This paper summarizes the resulting six (6) research projects. The paper also includes participants' reflections, which describe how each student contributed as a team member. Results from several of the projects were presented at professional conferences.

The **fourth research paper**, by Zoltán Székely , titled "Assessment of Problem-Solving Skills based on Bloom's Revised Taxonomy in relation to Critical Thinking and Quantitative Reasoning," proposes Bloom's Revised Taxonomy as a framework to design and visualize assessments in the context of institutional and general education learning outcomes for critical thinking and quantitative reasoning. The author presents an assessment of problem-solving skills of freshmen college students in the framework proposed. By analyzing the outcomes in this framework, the author has obtained reasonable directions for instructional improvement, through demonstrating that Bloom's Revised Taxonomy is convenient for designing and visualizing an assessment and interpreting its outcomes in Bloom's hierarchy.

The **fifth research paper**, by Yukiko Inoue-Smith, titled "Factors in Success among University Students," addresses the following question: What does student success *really* mean? In the knowledge age, student success in higher

education is a major issue because it directly decides the positive outcomes of the students after graduating. Keeping this perspective in mind, the author discusses complex elements or factors that impact student success, emphasizing the fact that "student success" is defined in different ways in different institutions depending on their core values. The author further confirms the thought that it is time to establish a valid new definition of student success, as derived from a whole-person perspective—from being completion metrics to producing holistic well-being outcomes. And so, this paper will serve to promote conversations addressing this important topic: student success.

Section Two: Critical Essays

Section Two of this volume contains four critical essays. The **first critical essay**, by James D. Sellmann, titled "Guåhan Going Green?" scrutinizes four major theories of environmental philosophy to determine how they frame our understanding of human responsibility in relation to the natural environment and fellow animals. After reviewing Ecofeminist, Deep Ecology, Sentientist, and Anthropocentric approaches, Sellmann argues that each theory offers important ideas and practices that can influence Guåhan's environmental initiatives and the UOG Green Interns in particular. However, he concludes that a syncretic or eclectic approach is best, one that combines the four theories to harvest the best ideas from each approach, leaving the worst aspects behind, and thereby improve both our understanding of and our practice of environmental ethics in theory and in practice. Such an approach is both timely and imperative, for as the author notes, so far Guåhan's environmental initiatives are relatively superficial, and far more is needed to reduce pollution and our "carbon footprint" on Guåhan.

The **second critical essay**, by David Gugin, is "Teaching Time: Kathy Jetñil-Kijiner's Critique of Bioregionalism." Gugin cites the pertinent research on environmental concepts and strategies as he acknowledges that bioregional discourse has become associated with three terms central to its purpose and meaning: dwelling, sustainability, and reinhabitation. These terms can be argued, allegorized, and symbolized in a variety of literary and rhetorical forms. Gugin takes a close look at Kathy Jetñil-Kijiner's creative achievement in *Iep Jāltok*: *Poems from a Marshallese Daughter* to concretely demonstrate how bioregionalism articulates an ongoing process of renewal, resistance, and reimagination, all achieved in compelling and highly evocative forms of poetic expression. Indeed, Gugin argues that Kathy Jetñil-Kijiner's poetry suggests "a second critique of traditional bioregional assumptions, because in the contemporary world many people and indeed whole communities and nations are being deterritorialized, forced to migrate by war, socioeconomic collapse, and environmental destruction. Jetñil-Kijiner might ask—how can people live-in-place if their place has been taken away from them, is disappearing, or is already gone?"

The **third critical essay**, by Christen Dimalanta, "Not the Super Man, but the Saved Man: Fyodor Dostoevsky's *Crime and Punishment*," won the 2019 Robert Makus Prize for a critical essay written by a student at the University of Guam. It is fitting that Christen's essay follow that of David Gugin in this volume of *Micronesian Educator*, as Gugin was her academic advisor while she was an English major at UOG. Christen's essay examines the moral turpitude and spiritual suffering of Dostoevsky's protagonist, Raskolnikov, as he undergoes a conversion experience from an ideologically radical student to a conscience-stricken criminal painfully aware of his sin and what measures must be taken in order to follow the path of redemption, a path that brings Raskolnikov to Siberia.

The **fourth critical essay**, by C. S. Schreiner, "The Origin of Originality," takes on a speculative tone as it ponders the curious disinterest in originality among creative writers of the digital era. In the 20th century, stylistic novelty generally inspired by the modernist anthem to "make it new," and concretely guided by strong (if not adversarial) readings of literary precursors, often took artistic form in experiments of creative defamiliarization. Today such nonconformist aesthetic patterns are increasingly rare, replaced by something conspicuously mimetic with deep commercial roots: fan fiction. As for prose forms, originality no longer pertains to unfamiliar or incomparable achievement, but to literary performances that stay true to the *original source of inspiration*. In the workshop, there is much discussion of the literary and cinematic sources to which today's writers are beholden, and which they often seek to emulate with explicit fidelity. For the young writers who practice *fandom*, loyalty to trending exemplars or *influencers* from the media industry is not about aesthetic individuation, but sociality—following, sharing, critiquing, admiring. Such a development would have been unthinkable before the advent of social media.

Section Three: Book Reviews

Section Three of this volume contains three book reviews. The **first book review**, written by Paulette Coulter, is of Caroline Criado Perez's *Invisible Women: Data Bias in a World Designed for Men,* published in 2019. Perez's book, which focuses on the disparity between data collected on men and women in all walks of life, shows that throughout human history, the information and knowledge compiled about humans has primarily pertained to *male* humans, which she identifies as the gender data gap. One result of this state of affairs is that grants are denied to many researchers due to the lack of historical data on women, who were "not a matter of public concern." Coulter concludes that Perez justifies "the need for education to render both genders equally visible no matter where one is in the world."

The **second book review**, by Perry J. C. Pangelinan, conducts a retrospective appraisal of Carlos Madrid's *Beyond Distances: Governance, Politics and Deportation in the Mariana Islands from 1870 to 1877,* a book first published in 2006. Pangelinan's review presupposes that time has not diminished the meaning and significance of Carlos Madrid's landmark study of the Marianas Islands.

The **third book review**, by C. S. Schreiner, takes a close look at *Savage Gods*, by Paul Kingsnorth, published in 2019. The author, Kingsnorth, whose writings were previously associated with the anti-globalization movement and the Dark Mountain environmental initiative, has written a bracing if not disturbing account of his family's emigration to rural property in Ireland, where they homestead, encountering myriad challenges posed by the weather and soil, but also problems of metaphysical scope that test Kingsnorth's identity and resolve as a writer and environmentalist.

Yukiko Inoue-Smith, PhD, Professor of Educational Psychology and Research
Christopher Schreiner, PhD, Professor of English
Editors

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Section One

Research Papers

Developing Effective Culturally Specific Sexual Misconduct Policies and Prevention Strategies for Campuses in Micronesia

Cynthia Cabot, MPA, Guam Coalition Against Sexual Assault and Family Violence
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The people of Micronesia live in communities that are diverse, predominantly Asian/Pacific islander, and rich in cultural and traditional practices. Although some of the cultures represented often communicate respect in the form of silence and obedience, other cultures value being more expressive. This diversity is evident in discussions on the topic of sexual violence. Openly discussing sexual violence has the potential to clash with cultural norms that otherwise perpetuate silence. This presents a challenge to those working in the Micronesian region to empower communities with awareness, and to develop socially viable approaches to preventing sexual violence. To deliver culturally competent services, we must ask how campus-based programs can effectively develop sexual misconduct policies. This paper summarizes the research methods employed in, and results from, the ARC3 Survey administered to seven campuses throughout Micronesia: suggesting strategies for developing culture-specific sexual misconduct policies.

Keywords: Pacific Islanders, sexual misconduct policies, prevention strategies, campuses, cultural competency, Micronesia

Introduction

College campuses should be healthy environments for students to gain knowledge and foster lifelong skills. However, a review of statistics from college campuses revealed an alarming number of college sexual assault occurrences. To address this in Micronesia, a collaboration was forged between the Guam Coalition Against Sexual Assault and Family Violence and postsecondary institutions throughout the region to create campuses that are safe, violence-free, and conducive to learning. This paper shares the research approach, methods, results, and findings of the Administrator-Researcher Campus Climate Collaborative (ARC3) Survey administered to seven campuses throughout Micronesia to assess the prevalence of sexual misconduct reported by students. In addition, it explores strategies for developing culturally specific sexual misconduct policies and prevention strategies in college and trades academy campuses throughout Micronesia.

Micronesia is a region in the north Pacific noted for its small islands. The region is comprised of two independent countries (Nauru and Kiribati), three Freely Associated States with the United States (Federated States of Micronesia, Republic of the Marshall Islands, and the Republic of Palau), and two U.S. territories (Guam and the Commonwealth of the Mariana Islands). Guam is the largest continuous land mass in Micronesia, which has resulted in it being a hub of development, westernization, and resources for the region. Micronesia's strategic geographical location between the East and the West has rendered it a key military asset for the U.S.

Seven campuses throughout Micronesia participated in this study. Specifically, students from one university, two trades academies, and four community colleges from four differing political jurisdictions in the region took the survey. Three of the campuses were located on Guam (Guam Community College, Guam Contractor's Association Trades Academy, and the University of Guam), two in the Commonwealth of the Northern Mariana Islands (Northern Marianas College and the Northern Marianas Trades Institute), and one from Palau (Palau Community College) and the Federated States of Micronesia (College of Micronesia National Campus). Some jurisdictions in Micronesia have enacted laws against violence only very recently (in the past few years.) Furthermore, some of the campuses who participated in this study had either no existing policy addressing sexual misconduct or one that was grossly

insufficient. This is an important consideration when examining the context of sexual misconduct in Micronesia. The absence of statute is reflective of the societal challenges to addressing issues of sexual assault in traditional Micronesian communities. In the Micronesian region, some factors that needs to be considered when developing policies and services to address campus sexual assault are traditional beliefs, values, and practices. The attitudes and behaviors towards women such as sexual assault is learned and encouraged through society and unspoken cultural practices. According to the American College Health Association (2016), "Cultural acceptance of rape myths and communities that tolerate sexual aggression create environments in which many individuals are disempowered" (p. 1).

Literature Review

College campuses are envisioned to be positive environments for students to search, gain, and foster new knowledge. However, it is well known that sexual assaults not only occur on college campuses, but also that the campuses often lack policies and procedures effectively to address these assaults. Since the mid-1980s, it was evident that for decades, campus reports of sexual assault did not accurately reflect the number of sexual incidents occurring on campuses and that sexual assault was underreported (Berger, Searles, Salem, & Pierce, 1986). The decades after did not changed much to curb the problem and is further amplified by underreporting (Mustaine & Tewksbury, 2002). The UN Women's (2011) report on Ending Violence Against Women and Girls acknowledges that underreporting may be caused by a myriad of factors to include: lack of knowledge, lack of trust in the system, lack of confidentiality, fear of victimization, fear of retribution, and personal relationship with the assailant.

The last few years has seen significant attention toward campus sexual violence in the United States by way of improving disciplinary initiatives and policies at the school and governmental levels (Ridolfi-Starr, 2016). Despite this effort, there still exists a systematic problem regarding the methods of campus sexual assault investigations and adjudications. This is causing both, the accused and the accusing, to lack confidence in the process and outcomes. According to Ridolfi-Starr's (2016) data informed policy reforms, realized by transparency and accountability, are critical. It is with better policy that schools will be in a stronger position to fulfill the promise made by Title IX law.

In the Pacific region, a key factor for underreporting is cultural implications. Cultural viewpoints in the Pacific influence gender roles, such as masculinity and attitudes towards sexual assault in the Pacific region. The attitudes and behaviors towards women, such as sexual assault is learned and encouraged through society and culture. Additionally, Alo (2018) described how families are very private with situations that may bring unwanted attention to the family. This shame gives way to a culture of silence that further contributes to underreporting of cases. Traditional Micronesian attitudes and beliefs around sex and sexuality may be barriers to addressing sexual assault when in occurs.

Another significant cultural implication is discussed by the National Organization of Asians and Pacific Islanders Ending Sexual Violence (NAPIESV), who conducted listening sessions with more than a hundred Asian Pacific Islander (API) participants including the Commonwealth of Northern Marianas Islands (CNMI). The findings of the listening sessions indicated a need for gender-based approaches in the Pacific region. The need to create spaces for the discussion of sexual assault and gender roles and social norms without stigma and influence from outside norms was identified. The cultural dynamics in the Pacific region differs from their U.S. counterparts and cultural practices in the Micronesian region support the culture of silence.

Many students on Micronesian campuses come from traditional communities where traditional values and law greatly influence societal norms. These communities tend to be remote and isolated with limited exposure to western practices and beliefs. For example, there are islands in the Federated States of Micronesia (FSM) that do not have electricity and require a three-day ship ride to arrive at the nearest locality with access to an airport, supermarket, and college campus. In the case of the FSM state of Yap, for example, patriarchal values dominate societal interactions and life remains primarily subsistence with people living off the land.

In addition to the challenges of gender dynamics, a traditional taboo on discussions related to sexuality and sex is consistent throughout Micronesia. De La Cruz and Natividad (2017) reported that public discussions of sex were considered indicative of promiscuity and was a topic that was only socially acceptable to be discussed in the context

of a marriage between a husband and his wife. These conservative views around sex present a challenge for students from Micronesia on college campuses. The absence of these critical conversations may render misinformation about acceptable sexual norms and practices, such as consent.

Campuses throughout Micronesia present a unique set of challenges when educating about sexual misconduct due to the culture of silence and taboo when discussing issues related to sex. The present study focuses on the API populations in Micronesia and address the following four research questions:

> What is the prevalence of sexual harassment and sexual misconduct reported by students on campuses across Micronesia?
> Are there significant differences in the prevalence of sexual harassment among seven campuses?
> Are there associations between victimization and gender, ethnicity, or sexual orientation?
> Are there associations between perpetration and gender, ethnicity, or sexual orientation?

Methods

Data Collection and Survey Instrument

We conducted a survey of 976 students on seven campuses throughout Micronesia. The data was collected using convenience sampling. All students from the participating institutions were eligible to participate. Participants were recruited via direct contact by e-mail, recruitment flyers, and faculty members who extended extra credit opportunities to students for completing the survey. The survey was self-administered online on each campus using Qualtrics from March through October 2018 until achieving at least the 10% response rate on each campus. The highest response rate by site was 23% from a trades academy campus located in Guam.

The survey instrument used in the study was the ARC3 Survey. The ARC3 Survey is a no-cost, evidence-based campus climate measure administered to students, which was "created by adapting portions of existing surveys already known to be reliable and valid measures..." (Swartout, et al., 2018, p. 2). The survey measures experiences of victimization and perpetration and is comprised of 19 modules that include perceptions of campus climate regarding sexual misconduct, sexual harassment, stalking, dating violence, sexual violence, and institutional and peer responses. Examples of specific measures contained in the ARC3 Survey include the Rutgers Campus Climate Survey, the Department of Defense Sexual Experiences Questionnaire, and the Sexual Experiences Survey Short Form Victimization. Module 18 contained questions related to demographics and were adapted to specifically reflect responses relevant to the Micronesian region, such as in the case of ethnicity. The survey was prefaced with a letter from the principal investigator explaining the purpose of the study, the nature of their voluntary participation, implied consent, and the ability to end participation in the research at any time. The study protocol was Institutional Review Board (IRB) approved to conduct the survey in three Guam campuses. There were no formal IRB mechanisms in the remaining four campuses; however, approval was obtained by comparable administrative entities for the protection of human participants.

Study Variables and Data Analysis

We selected the following variables to be included in the study: gender, ethnicity, and sexual orientation; sexual harassment by faculty and staff, and by other students (modules 5-6); and sexual violence victimization (module 11) and perpetration (module 12). The data was encoded and analyzed using version 24 of the Statistical Package for the Social Sciences. A total of 976 survey responses from seven campuses were included in the analysis. Missing data (with responses of "refuse" or "don't know") were recoded as missing for all analyses. Descriptive statistics were calculated for all variables included in the analysis. Bivariate analysis was conducted between demographic characteristics and the outcome of interest (sexual harassment, victimization, and perpetration) using Pearson's chi-square tests.

Results

Demographics

Table 1 shows demographic characteristics across campuses. The mean age of all respondents was 23.9 years (SD = 7.3). Most of the respondents across campuses identified as female (64.7%), with 35.3% identifying as male. The most frequently reported ethnicity across campuses was CHamoru at 29.1%, followed by Filipino at 25.5%, Palauan at 6.9%, Pohnpeian at 5.3%, Chuukese at 4.8%, Yapese at 4.6%, mixed race at 16.9%, and other at 6.8%. Most participants identified their sexual orientation as heterosexual (81%), with 19% reporting non-heterosexual.

Table 2 reports the percentage of students who experienced specific behaviors of sexual harassment or discrimination at least once and delineates if it was perpetrated by a faculty/staff member or by other students. There were significant differences among institutions. In response to most questions, other students were generally the more common perpetrators of offensive behaviors as compared to faculty/staff members. Yet, Site 5 students responded to four questions wherein faculty/staff were more frequently the perpetrators of sexual harassment or discrimination. When students were asked if someone made offensive sexist remarks (41%), repeatedly told sexual stories or jokes that were offensive to you (29.2%), made offensive remarks about your appearance, body, or sexual activities (25.0%), and made gestures or used body language of a sexual nature which embarrassed or offended you (16.7%); faculty/staff reportedly committed these acts more so than students. This was also the case in sites 7 and 2 for one and two questions respectively.

The ARC3 Survey also asked students if they ever experienced sexual violence. As reported in Table 3, when students were asked if they had been a victim of at least one instance of unwanted touching, penetration or attempted penetration, 23.1% of females and 12% of males reported yes. The difference between these two groups was found to be statistically significant ($p < 0.001$ level). There were also statistically significant differences when comparing the responses of heterosexuals (17.7%) and non-heterosexuals (26.1%) at the $p < 0.01$ level. In addition, when asked if students had been a victim of at least one instance of completed or attempted oral, vaginal, or anal sexual assault, there was significant differences in the percentages reported by site, gender, and sexual orientation (all at the $p < 0.001$ level). Note that caution should be exercised when reporting this data by site because of the small sample sizes for some campuses. When examined by gender (for all institutions combined), 19.1% of females and 8.4% of males also responded yes to this question. Similarly, 24.4% of non-heterosexual students and 13.3% of heterosexual students indicated yes.

In specifically examining reported victimization by ethnicity, the four categories reporting the highest percentages of victimization for each of the two questions were as follows: other, mixed, Yapese, and Chuukese. More specifically, when students were asked if they had been a victim of at least one instance of unwanted touching, penetration or attempted penetration; 22.7% of Yapese students and 19.6% of Chuukese students reported yes. Similarly, when students were asked if they had been a victim of at least one instance of completed or attempted oral, vaginal, or anal sexual assault; and 18.2% of Yapese students and 19.6% of Chuukese students reported yes.

In addition to questions asked about their victimization of sexual violence, students were asked about their perpetration of sexual violence. When asked if they have ever perpetrated at least one instance of unwanted touching, penetration, or attempted penetration, 3.9% of females and 7.1% of men reported yes. There was a statistically significant difference between these two groups ($p < 0.05$ level). The same level of significance was found in comparing responses by ethnicity. More specifically, the highest reported percentages by ethnicity were Yapese reporting 15.9%, Pohnpeian at 10%, and other at 5.9%. There was also significance reported by sexual orientation, with heterosexuals reporting 4.1% and non-heterosexuals reporting 9.6% ($p < 0.01$ level).

A second question on perpetration asked if they have ever perpetrated at least one instance of completed or attempted oral, vaginal, or anal sexual assault. Responses by site, ethnicity, and sexual orientation were found to be significant. When examined by ethnicity, Yapese reported the highest percentage at 13.6%, followed by Pohnpeian at 10%, and other at 4.4% ($p < 0.05$). Lastly, those who identified as non-heterosexual responded yes at 8.5%, as compared with heterosexuals at 3.2% ($p < 0.01$).

Table 1. Demographic Characteristics by Institution

Demographic Characteristics (%)		Site 1 (n=403)	Site 2 (n=228)	Site 3 (n=30)	Site 4 (n=128)	Site 5 (n=26)	Site 6 (n=67)	Site 7 (n=94)	Total
Total		41.0	23.2	3.1	13.0	2.6	6.8	9.6	100.0
Gender	Male	30.3	43.9	76.7	19.5	38.5	34.3	39.4	35.3
	Female	68.5	55.3	23.3	79.7	53.8	64.2	57.4	64.7
Ethnicity	CHamoru	30.0	43.9	50.0	32.0	19.2	0.0	1.1	29.1
	Filipino	33.0	23.2	23.3	39.8	3.8	1.5	2.1	25.5
	Chuukese	3.7	5.3	6.7	0.0	23.1	1.5	11.7	4.8
	Palauan	2.5	0.9	3.3	2.3	7.7	73.1	0.0	6.9
	Pohnpeian	2.0	0.9	3.3	0.0	3.8	7.5	36.2	5.3
	Yapese	2.2	0.9	0.0	0.8	0.0	1.5	34.0	4.6
	Mixed	18.6	19.7	10.0	18.0	26.9	9.0	5.3	16.9
	Other	7.7	3.5	3.3	7.0	15.4	6.0	9.6	6.8
Sexual Orientation	Heterosexual	87.1	76.5	89.3	78.0	65.4	80.3	71.9	81.0
	Non-heterosexual	12.9	23.5	10.7	22.0	34.6	19.7	28.1	19.0
Age	Mean (SD)	23.7 (7.4)	25.0 (8.4)	31.3 (8.8)	23.5 (6.8)	23.6 (9.1)	21.4 (5.3)	22.5 (5.7)	23.9 (7.3)

Note: SD denotes standard deviation

Table 2. Percentages of Students Reporting Specific Offensive Behaviors At Least Once

		Site1	Site2	Site3	Site4	Site5	Site6	Site7	p-value
Treated you "differently" because of your sex.	by faculty/staff	16.6	7.9	6.7	17.2	4.2	7.5	22.3	< .01
	by other students	22.8	7.5	0.0	21.9	12.5	7.6	22.6	< 0.001
Displayed, used, or distributed sexist or suggestive materials	by faculty/staff	10.6	3.1	0.0	9.4	0.0	4.5	13.8	< .01
	by other students	14.5	4.0	0.0	9.4	8.3	12.1	13.8	< 0.01
Made offensive sexist remarks	by faculty/staff	13.1	3.1	0.0	14.8	41.7	10.6	18.3	< 0.001
	by other students	22.2	4.4	0.0	17.3	20.8	15.2	22.6	< 0.001
Put you down or was condescending to you because of your sex	by faculty/staff	8.5	0.9	0.0	8.6	4.2	3.0	15.1	< 0.001
	by other students	15.3	3.1	0.0	13.4	8.3	4.5	12.8	< 0.001
Repeatedly told sexual stories or jokes that were offensive to you	by faculty/staff	9.5	3.1	0.0	6.3	29.2	9.0	19.1	< 0.001
	by other students	16.3	4.4	0.0	17.3	20.8	12.1	23.9	< 0.001
Made unwelcome attempts to draw you into a discussion of sexual matters	by faculty/staff	6.3	1.8	0.0	3.9	8.3	1.5	11.8	< 0.01
	by other students	11.3	3.1	0.0	10.9	8.3	3.0	17.0	< 0.001
Made offensive remarks about your appearance, body, or sexual activities	by faculty/staff	8.0	4.0	0.0	9.4	25.0	3.0	18.1	< 0.001
	by other students	14.8	3.1	0.0	14.8	16.7	6.0	21.3	< 0.001
Made gestures or used body language of a sexual nature which embarrassed or offended you	by faculty/staff	5.3	2.2	0.0	7.0	16.7	1.5	11.7	< 0.01
	by other students	9.5	4.0	0.0	9.4	4.2	3.0	22.6	< 0.001
Made unwanted attempts to establish a romantic sexual relationship with you despite your efforts to discourage it	by faculty/staff	4.0	1.8	0.0	5.5	0.0	1.5	11.7	< 0.01
	by other students	10.0	3.5	0.0	9.4	8.3	3.0	18.1	< 0.001

Note: P-values associated with chi-square test of homogeneity

Table 3. Victimization and Perpetration Rates by Institution and Demographic Characteristics (%)

		Victimization		Perpetration	
		Victim of at least one instance of unwanted touching, penetration, or attempted penetration	Victim of at least one instance of completed or attempted oral, vaginal, or anal sexual assault	Perpetrated at least one instance of unwanted touching, penetration, or attempted penetration	Perpetrated at least one instance of completed or attempted oral, vaginal, or anal sexual assault
Total		19.8	15.6	5.1	4.1
Institution	Site 1	22.4	16.9***	3.8	3.0**
	Site 2	12.1	10.3	5.0	4.1
	Site 3	6.7	6.7	0.0	0.0
	Site 4	16.5	14.2	5.5	3.1
	Site 5	40.9	40.9	2.5	12.5
	Site 6	18.8	12.5	4.5	3.0
	Site 7	27.2	25.0	0.8	10.8
Gender	Male	12.0***	8.4***	7.1*	5.6
	Female	23.1	19.1	3.9	3.2
Ethnicity	CHamoru	17.0	13.7	4.3*	3.6*
	Filipino	18.5	13.3	4.5	3.2
	Chuukese	19.6	19.6	2.2	2.2
	Palauan	16.9	9.2	3.0	3.0
	Pohnpeian	14.0	14.0	10.0	10.0
	Yapese	22.7	18.2	15.9	13.6
	Mixed	24.7	21.6	3.7	3.1
	Other	27.3	21.2	5.9	4.4
Sexual Orientation	Heterosexual	17.7**	13.3***	4.1**	3.2**
	Non-Heterosexual	26.1	24.4	9.6	8.5

Note: P-values associated with chi-square test of independence. Significant levels: *** $P < 0.001$; **$P < 0.01$; *$P < 0.05$

Discussion

Limitations and Strengths of the Research

There are a few limitations of this study. First, the non-randomized process of participant selection that led to selection bias threatened the internal validity of the study. In this case, students who elected to complete the survey may have differed from students who elected not to. This alone may bias the outcome of the research. Further, in cases where students received extra course credit, self-selection occurred, which further limited the generalizability of the survey's findings. In addition to limitations of the internal validity of the study, there also exists a compromise to its external validity. More specifically, the population validity of the research can only be extended to the seven campuses who participated in the survey. It cannot be generalized to all campuses in Micronesia or to the larger Pacific.

Nonetheless, there are numerous strengths of this research study. First, it employs the use of the ARC3 Survey, which is an evidence-based, campus climate measure that was drawn from instruments with established validity and reliability. The use of this survey reduced response bias by formulating questions effectively to reduce the potential for incorrect answers. Further, the survey effectively measures both victimization and perpetration of campus sexual misconduct. Another strength of this study is its expanse across seven campuses throughout all of Micronesia. No other study has attempted to understand the topic of sexual misconduct on colleges throughout the region. Nearly 1,000 surveys were completed reflecting a minimum of 10% of campus student populations. Hence, the findings of this research presented a useful baseline for understanding sexual misconduct in Micronesia and may be used as a comparison point for future studies on this topic.

Implications for Theory and Research

The findings of this research provide a backdrop for better understanding campus sexual misconduct across Micronesia. Studies on campus sexual assault over the past few decades provide evidence that female undergraduate students experienced greater sexual harassment from fellow college students as compared to faculty (Cantalupo & Kidder, 2018). While the results of this study are consistent with the literature on campus sexual assault, one unique finding is student reports of specific offensive behaviors being perpetrated by faculty/staff more than by those committed by other students on specific questions. While other students were generally the more common perpetrators of sexual harassment or discrimination, there were a number of questions with student responses indicating the offenses to be committed by faculty/staff. Site 5 specifically had four questions with faculty/staff manifesting higher percentages of reports as compared to students. This particular campus is a trades academy, which has historically enrolled more male students, the majority of faculty have been male, and the campus had no existing sexual misconduct policies in place. There is the possibility that hegemonic masculinity (that which is culturally and politically dominant at a particular time and in a particular place) may foster a learning environment where there is an unspoken acceptance of sexual harassment and discrimination (Scott-Samuel, Comm, Crawshaw, & Oakley, 2015). A review of the literature indicated no specific studies examining campus sexual assault in these institutions of learning. Hence, an area for future research could specifically focus on the experience of campus sexual assault in trades academies to assess if there are increased risks.

This research clearly evidences the vulnerability of individuals to sexual violence victimization who are female non-heterosexual and Yapese or Chuukese in ethnicity. In examining reported sexual violence perpetration, males, non-heterosexuals, and those who identified as Yapese and Pohnpeian reported the highest percentages of having perpetrated sexual violence. These findings are consistent with the current literature relative to the prevalence of victimization and perpetration by gender and gender identity. However, data specific to the ethnic groups of Yapese, Chuukese, and Pohnpeians are unique findings of this study.

The islands of Yap, Chuuk, and Pohnpei are states of FSM. The FSM Department of Health and Social Affairs (2014) conducted a prevalence study examining violence against women in their community. Findings reported that after physical violence and extramarital relationships:

> Female participants listed rape/forced sex as the most common form of violence against women in their communities. Participants indicated that sexual violence against women happens regularly and in public spaces as much as in secluded, more private spaces. (p. 43)

The study also asked women participants of the study if they experienced sexual abuse before the age of 15 and 14% reported yes. More specifically, the percentage of child sexual abuse reported by island was as follows: Chuuk (16.9%), Yap (14.7%), and Pohnpei (10.7%).

The high prevalence of child sexual abuse among women may be related to traditionally patriarchal values, wherein the voice and rights of women are limited. On the islands of Chuuk and Yap, there are currently no legal statutes against family violence to include child sexual abuse. On the island of Pohnpei, however, a statute was recently passed in 2018 in the state legislature. The high prevalence of sexual assault in jurisdictions without laws and social policies against it is expected. Hence, the role of women's organizations in the FSM has been critical to the development of policies that protect and promote their rights. More specifically, the Pohnpei Women's Association and the Chuuk Women's Council have been instrumental in generating the discourse on women's issues related to family violence, sexual assault, the age of consent, and women's political participation. Members of these institutions have challenged traditional norms on the role of women in their communities that are often culturally prescribed.

Implications for Policy and Practice

Given the degree of social isolation and patriarchal norms in many Micronesian communities, culturally competent policies and prevention approaches need to be developed to create safe college and trade academy campuses in

Micronesia. Gender-based approaches and strengthened victim-centered support that are absent in the Micronesian region should be developed when delivering services to students in the region. The integration and implementation of such practices promotes the positive change and development of social norms that support a victim-centered approach. Trainings are clearly indicated: with the goal of changing cultural norms, when traditional beliefs perpetuate sexual violence. Such trainings will include instruction in bystander intervention.

Cultural viewpoints in the Pacific influence gender roles such as masculinity and attitudes towards sexual assault in the Micronesian region. Cultural sensitivity practices consider interpersonal dynamics such as the disclosure of sensitive topics to females in the presence of males. This is especially necessary when family members are participating in groups together. Cultural taboos prohibit discussions about sex: particularly when discussions are held in the presence of relatives of the opposite sex. Accommodations for this cultural practice have included holding workshops with the separation of genders when necessary.

In addition to gender considerations, facilitators must be mindful of culturally prescribed considerations that age and the holding of traditional titles bear. Consistent with other Pacific island groups, Micronesians collectively hold high regard for elders and those older than them. Hence, when conducting discussions groups, it is ideal to have participants from similar age groups. This is an attempt to increase the level of sharing among participants, as it is customary that younger people defer to those older and will generally remain silent or only minimally verbalize their thoughts in the presence of those perceived to be older. Similarly, when a person holding a traditional title within the clan is a member of the group, it is common that discussion points will be relegated to that individual as the spokesperson for the group.

A resource that may be used when working with Micronesians in varying communities is a regional sexual misconduct awareness toolkit. The toolkit was developed by the Guam Coalition Against Sexual Assault and Family Violence in partnership with classes at the University of Guam. This toolkit contains components that practitioners may use when educating students from Micronesia about sexual misconduct. The toolkit takes great care to present information about sexual misconduct in a culturally competent way that shares statistics and empowerment messaging that has been tested to effectively speak to this unique population. The toolkit also provides a teacher's guide to lead discussions with students in the classroom that considers the cultural worldview and lens through which gender dynamics and interactions are understood. It incorporates a lesson on consent, utilizing the analogy of asking someone to go on a swim in the ocean. The lesson on consent is downloadable in an animation that can be used as part of the discussion on what constitutes consent in a Micronesian context. The toolkit is also customizable for use in any of the Micronesian islands or with Micronesian ethnic groups living abroad. This resource is useful when specifically addressing campus sexual assault with Micronesian communities.

Conclusion

This paper presented the results of a study conducted across seven college campuses in Micronesia to assess the prevalence of campus sexual assault. The ARC3 Survey was administered and research findings indicated the prevalence of sexual harassment and sexual misconduct victimization reported by students who were women, non-heterosexuals, and those from the ethnic groups of Chuukese and Yapese. In the case of perpetration, there were associations between those who were male, non-heterosexual, and those from the ethnicities of Yapese and Pohnpeian. Further, significant differences in the prevalence of sexual harassment was found across campuses. In addition, further research is needed to assess the possible risk factors associated with trade academy campuses.

In closing, the development of culturally competent campus policies and prevention approach to address sexual misconduct in Micronesia's college campuses is imperative. This approach is consistent with empowering traditional communities throughout the region and is necessary to create safe and violence-free campuses. Additional regional resources such as the regional sexual misconduct awareness toolkit developed by the Guam Coalition Against Sexual Assault and Family Violence should be incorporated into campus awareness and training programs. College campuses should be the nexus setting the tone for safe discussion spaces about sex and sexuality. These critical conversations are necessary in order to reduce the prevalence of campus sexual assault. Continued efforts are needed to realize a sexual violence-free region where all students are safe, and their environment is conducive to learning.

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Should ESL Teachers Push-In in Guam?

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The Guam Department of Education has adopted the Common Core State Standards (CCSS). Yet, despite the large population of English Language Learners (ELLs) in Guam, there has been no research investigating the impact of the new standards on educational practices in Guam's English as a Second Language (ESL) programs. This paper promotes the local community's awareness of the influence of the CCSS implementation on ESL education in Guam. The paper discusses the impact of the CCSS on ESL educators in the United States, and it discusses push-in ESL instruction as a trend in the field. The paper considers the feasibility and practicality of push-in instruction in Guam, by analyzing the major factors that affect ESL programs in Guam. The author recommends that local researchers discover ways of adapting push-in to ELLs' learning, in line with Common Core Standards.

Keywords: English as a second language, ESL education, ESL teachers, push-in, inclusion, coteaching, teacher collaboration, teacher responsibilities, Common Core, CCSS, CCR, Guam, Guam education

Introduction

English as a Second Language (ESL) teachers in K-12 classrooms play important roles. Their duties vary depending on the types of ESL services that their students need and the requirements from their respective schools. ESL teachers may teach students through a pull-out, push-in, or sheltered model and have other non-teaching duties, such as language assessments and consultations. Whether or not ESL teachers have additional tasks beyond teaching in the classroom, the main goal is to support their students to develop the ability to use English language for basic needs and academic purposes. The ESL teachers serving in Guam public schools are familiar with their wide range of tasks because of the clear expectations noted in the *Guam ESL Procedural Manual* (GDOE, 2012).

However, the implementation of the Common Core State Standards (CCSS) brings confusion and challenges, simply because the currently designed ESL programs are not aligned with the CCSS. Additionally, the new standards also require students to meet higher expectations by emphasizing ESL students' full access to grade-appropriate content knowledge. With this demand, the roles of ESL teachers are likely to change, as it is happening in other states. Despite that the CCSS have been around Guam for over three years, there are no studies available for the ESL education and the CCSS that apply specifically to Guam or neighboring Pacific islands. Since nearly half of students in Guam public schools are identified as English Language Learners or ELLs, it is important to closely consider the impact of the CCSS adoption on the ESL education system in Guam.

The purpose of this paper is to increase the awareness of the Guam public school ESL teachers and other stakeholders of the influence of the CCSS implementation to the ESL education in Guam—focusing on evolving roles of the ESL teachers—and to recognize the crucial necessity of future studies. This paper first offers the information about the context of the paper and past practices in Guam, reviews the major impact of the CCSS to the ESL teacher roles, and examines the applicability and practicality of the changes to Guam based on the factors influencing the ESL education in Guam. Further, the paper recognizes the compelling needs for future studies. While a brief introduction to the CCSS is provided, it does not discuss the standards themselves, as the focus is the shifting roles of the ESL teachers.

Background

ESL Program and ESL Teacher Roles in Guam

Guam Department of Education (GDOE) published the *Guam ESL Procedural Manual* in 2012 to provide guidance to all stakeholders of the ESL education system. GDOE's ESL Program is a federally funded program that provides support for serving ELLs in accordance with federal requirements such as the No Child Left Behind Act of 2001 and Title IX (GDOE, 2012). In the GDOE's school system, once students are identified as ELLs, they are placed into one of the ESL programs: pull-out, sheltered, or consultation at their respective schools based on the results of the LAS Links Assessments.

This pull-out instruction is only available at elementary schools within the Guam public school system while the sheltered instruction, which refers to the instruction that the ESL teacher brings general education curriculum to ESL classrooms with modifications and accommodations, is available at both elementary and secondary levels (GDOE, 2012). Students participating in the consultation program are placed in general education classrooms with modifications and accommodations provided by content area teachers with the consultative support from the ESL coordinator and teachers (GDOE, 2012). This structure of the ESL program of GDOE serves ELLs, which accounts for nearly half of the total population in Guam public schools. These ESL students come from various linguistic and ethnic backgrounds, including Chamorro, the native inhabitants of Guam, Chuukese, Kosraean, Marshallese, Palauan, Pohnpeian, Yapese, Chinese, Filipino, Japanese, Korean, and other Asian or other Pacific islands, and these students may attend any of the 41 public schools in Guam (Bureau of Statistics and Plans, 2015). Each public school has an ESL coordinator and ESL teachers. For schools with a smaller population, the ESL coordinator and teacher positions are combined.

The responsibilities of the ESL coordinators and teachers in Guam public schools are similar under the guidance of the manual. The ESL coordinator performs the most of administrative duties related to the ESL program at the school site, including: (1) identifying, assessing, and placing new students, (2) keeping the records up-to-date, (3) facilitating consultation meetings, and (4) attending monthly district-wide coordinator meetings (GDOE, 2012). The ESL teachers at the elementary schools have been serving their ELLs primarily via pull-out or sheltered programs. Pull-out refers to the instruction that students are *pulled out* from general education classroom by the ESL teacher to receive the ESL instruction, and these students are usually grouped by their English proficiency levels (Haynes, 2016). This model is a commonly used model for ESL instructions in the United States. Traditionally, the pull-out program aims to develop the target language skills, and it allows accommodating the specific needs of the students (Lacina, Levine, & Sowa., 2009). In the recent years, the pull-out program has started including content instruction as well. The sheltered instruction is a popular ESL instructional model, especially for secondary schools as it provides the content-based instruction. Another model that reinforces content knowledge is a push-in model, which refers to the instruction that the ESL teacher is going into content classrooms to work with ELLs (Haynes, 2016). However, this push-in or inclusion model is not currently available in Guam public schools. To summarize, GDOE's ESL teachers instruct students either in a pull-out or sheltered setting.

The Common Core State Standards Implementation and ESL Education

In the spring of 2012, the same semester the ESL manual was published, GDOE adopted the CCSS in Language Arts and Math to replace the existing GDOE Content Standards and implemented fully in 2013. The CCSS, distributed by National Governors Association Center for Best Practices, Council of Chief State School Officers (2010b), contain rigorous academic standards for English Language Arts or ELA, mathematics, and literacy for history/social studies, science, and technical subjects. These standards target students' higher-order cognitive skills. Currently 41 states, the District of Columbia, Department of Defense Education Activity or DoDEA, and the U.S. territories, including Guam, American Samoan Islands, US Virgin Islands, and Northern Mariana Islands, have adopted the CCSS ("Standards in Your State," n. d.). The standards pursue the three key shifts: (1) "[r]egular practice with complex texts and their academic language" (para. 3); (2) "[r]eading, writing, and speaking grounded in evidence from texts, both literary and informational" (para. 8); and (3) "[b]uilding knowledge through content-rich nonfiction" para.12), to effectively prepare K-12 students for college and their future career.

The CCSS initially did not consist of a separate set of standards for ESL students but included a separate attachment called Application of Common Core State Standards for English Language Learners to provide general advice to educators, emphasizing that ELLs can meet the standards with additional support (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010a). Later, CCSSO (2014) issued Framework for English Language Proficiency Development Standards Corresponding to the Common Core State Standards and the Next Generation Science Standards in 2012, a document that describes the embedded language demands of the CCSS, and finally distributed English Language Proficiency (ELP) Standards in 2014, which correspond to the CCSS English Language Arts. Even with the guidance and unpacked language demands, the roles of the ESL teachers on this CCSS education reform are ambiguous because the ELLs' *can-do* lists are high-level academic skills that should be taught in the content-area classes rather than by ESL teachers. According to the CCSS, ELLs can accomplish the standards

"for reading and literature, writing and research, language development and speaking and listening without manifesting native-like control of conventions and vocabulary" (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010a, p. 1), and also for mathematics "as they are learning English" (p. 2). While the new standards indicate ELLs should be able to demonstrate the skills in the CCSS with their limited proficiency, the CCSS do not provide clear guidance on how ESL teachers can support (Halladay & Moses, 2013). The new standards indeed require high cognitive skills demonstrated by ELLs. For example, for a math standard, one of the language functions listed under the framework states: "Explain in words orally or in writing relationships between quantities and multiple representations of problem solutions" (Council of Chief State School Officers, 2012, p. 21). This task addresses both understanding of the content knowledge and the ability to speak or write to explain using the content-specific vocabulary. In this sense, the new standards consider the beginning ELLs who may struggle to understand and speak simple expressions. In addition, in the Common Core era, ELLs' development in language proficiency becomes a shared responsibility of all the teachers, as language should be learned concurrently with the content knowledge. Then how do the new standards influence the status of the ESL teachers?

Present: Evolving Roles of ESL Teachers in the Common Core Era

With the rigorous academic standards that consist of complex language functions, ELLs are expected to demonstrate content knowledge while developing their language skills. This means that content and language learning now become a shared responsibility of all the teachers. The CCSS implementation brings challenges to ESL students as discussed in the previous section, but it does not discuss how ESL teachers can be involved.

A summary of convening held in April 2013 by TESOL International Association (2013) notes that the challenges coming from the CCSS implementation create the notion that ESL teachers have lower status than mainstream teachers because the ESL teachers' voice is not included in the important decision-making discussions. Some other findings from this convening also include: the roles of ESL teachers can be vague at the school level depending on the administrations and other factors; the criteria for ESL teaching certification vary in different states; and the content teachers are not trained in teaching ELLs.

With the uncertainty where the ESL teachers stand in the Common Core era, there seems to be a message that ESL teachers must collaborate with content teachers because what the CCSS emphasize is that all students' literacy develops through rigorous content instruction. In order for ELLs to achieve the demands of the new standards, Valdés, Kibler, and Walqui (2014) point out that the current preparation and professional development for ESL teachers that focus on L2 acquisition theories and teaching methods are insufficient because the CCSS require teachers' understanding of the language used in content areas. In other words, ELLs should be learning in a language-and-content-rich setting, not only in a language-learning-focused setting. Thus, collaboration between content and ESL teachers is vital in the Common Core era (Valdés et al., 2014). For ESL teachers, this significance on collaboration can be a huge shift from their traditional teaching environment such as a pull-out setting that has emphasized the L2 acquisition theories and methodologies or even a sheltered setting that has focused curricular modifications. The collaboration for the CCSS—supporting ELLs to develop language and content knowledge concurrently—is possible when content and ESL teachers create a co-teaching environment. That is, this push towards co-teaching is a big shift that ESL teachers face in the Common Core era (TESOL International Association, 2016). This co-teaching for the ESL instruction is also called push-in or inclusion. The next section discusses the details of the push-in model.

Push-in

The co-teaching, also known as a type of push-in or inclusion model for the ESL instruction, has been identified to achieve both content knowledge and language achievements expected by the CCSS. The push-in model can be beneficial for ELLs because it allows them to learn age-appropriate content and language simultaneously without the stigma of remediation, but it can be challenging for ESL and content teachers as they need to work together to plan and implement the model effectively (Lacina et al., 2009). For the push-in ESL instruction, planning is crucial because it allows teachers to identify their tasks for the lesson (Honigsfeld & Dove, 2008). This concept of collaboration and the push-in model are not new to teachers. Prior to the CCSS, content teachers have collaborated with ESL teachers to support their ELLs, and some ESL teachers have taught their ELLs by going into mainstream classrooms. These

different ways of collaboration have taken place to meet the specific needs of the ELLs. Yet, the challenge that the CCSS bring to ESL teachers is that the push-in appears as the only way to teach their ELLs within the CCSS. Although they can collaborate with content teachers by planning the lessons and providing consultative support, the ESL teachers should also be interacting with their ELLs as they are teachers, not consultants. This challenge may create an uncertain position for ESL teachers.

In the meantime, the push-in also provides the most pragmatic approach to accommodate the CCSS's demands for ELLs and to utilize both content and ESL teachers' expertise. Peercy, Martin-Beltrán, Silverman, and Nunn's (2015) qualitative study displays a good example employing specializations of content and ESL teachers. The research specifically aimed for teacher learning from collaboration between ESL teachers and mainstream teachers by planning, teaching, and reflecting on the lessons together. The study reports that collaboration enabled learning in distributed, distributive ways and provides mutual understanding to analyze students' progress. What they mean by distributed and distributive ways is that how teachers influence one another from collaboration does not stop after one occurrence but continuously affects them beyond the time and space. That is, a mainstream teacher gains better insights of his or her ELLs after co-planning, co-teaching, and co-reflecting sessions, so the insights obtained will continuously impact the teacher in whether the ESL teachers are present. The findings and discussions of this study imply that collaborative teaching brings positive, productive experiences both to students and teachers while co-planning, co-teaching, and co-reflecting seem to require a large amount of common time and collaborative efforts. However, utilizing the push-in model as a primary vehicle to fully support ELLs to meet the CCSS, the ESL teachers' roles may need to be defined clearly to establish a common understanding of each other's responsibilities in the push-in setting.

When to push-in. Working together to plan, teach, and evaluate students' learning can be very challenging, particularly when there are limited number of ESL teachers and many more content area teachers at school sites. Not only that, the way in which ESL teachers should actively be involved in teaching the CCSS is still ambiguous with this move towards co-teaching, especially considering that ESL students are heterogeneous in linguistic and cultural backgrounds with differing English proficiency levels. To make the push-in successful, ESL teachers need be confident that their students are ready for the simultaneous learning of rigorous content knowledge and embedded language demands before ESL teachers start pushing in. That is, guidance should be provided for the ELLs' minimum English proficiency levels before the push-in takes place (Valdés et al., 2014). As previously mentioned, the CCSS focus on high-level cognitive functions and provides a minimal consideration to basic language skills. This also means that it is almost impossible for incoming ESL students who have no English background to function at their grade levels if pushed in under the CCSS. Thus, ESL teachers need to be aware about when to begin the push-in instruction by identifying the needs of ELLs.

How to push-in. In effect, how to perform the teaching in different content-area classrooms is the next challenge. It may be beneficial for ELLs if ESL teachers are in their mainstream classes to support by modeling for them in order to scaffold the content knowledge based on their English proficiency levels (Maxwell, 2013). If collaboration works well, ESL teachers can use their specialization to support their ELLs. However, at other times, ESL teachers' efforts may not benefit the ELLs directly because most certified ESL teachers are not trained in how to perform the push-in. For some cases, ESL teachers may end up playing a teaching assistant role in a co-teaching setting (TESOL International Association, 2013). This issue of the ESL teacher's knowledge of content has been identified as a barrier for the co-teaching (DelliCarpini, 2009); and with the push-in for teaching the CCSS, ESL teachers may face a bigger challenge. For instance, an ESL teacher goes into a geometry class to support his or her ELLs, and the lesson is aligned to the standard, "Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude" (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010b). In this situation, if the ESL teacher is not familiar with the content-specific vocabulary and the content objectives to be taught, it would be difficult to explicitly support the ELLs. The ESL teacher will have to rely on the content teacher's knowledge to help the ELLs. This creates the notion of the low status of the ESL teachers by making them feel "under-utilized" (Lacina et al., 2009, p. 111), which is also identified as one of disadvantages of the push-in model. DelliCarpini (2009) argues that many previous studies have discovered that ESL teachers in such partnerships carry a supportive role rather than a leading role. Also, as the push-in forces

the interactions between the content and ESL teachers, the power relations between teachers may complicate the working environment further. Evidence is found in several studies. McClure and Cahmann-Taylor's (2010) paper finds that the push-in mandates in the district caused the ESL teachers' self-perceptions of powerlessness and unimportance. Their negative perceptions of themselves can be problematic because their commitment as professionals can be affected. Also, Lo's (2014) research about content and L2 teachers' beliefs about their roles in co-teaching has shown that content subject and L2 teachers who were invested in the co-teaching had tensions and differing views on each other's roles. For example, while both content and L2 teachers agree that teaching of content-related academic language was the L2 teachers' role, the L2 teachers disagreed that their teaching was to *help* the content teachers (Lo, 2014). This finding suggests that the L2 teachers sought to take the ownership in what they were teaching. Further, Norton's (2013) research indicates the consistent findings by reporting that 100% of the ESL teacher participants perceived that teaching academic content was an equally shared responsibility while only 54.3%t of content teachers agreed to the same statement. Similarly, another recent study by Vatalaro (2015), ESL and general education teacher participants, provided varying responses regarding their roles and responsibilities. These findings confirm that establishing clear expectations and responsibilities in the push-in setting is a vital factor to acknowledge.

Summary: Therefore, without clear ideas, ESL teachers in the Common Core states have begun pushing-in to advocate for their ELLs to function at the appropriate grade levels the CCSS asks. They will be dedicated and eventually figure out how to effectively push-in for ELLs. As the push-in is a trending move with the CCSS implementation, it will possibly be added to the ESL educational system in the near future, although this push-in model is not part of the current ESL programs available at Guam public schools. In fact, the popularity of the push-in model for the CCSS was already introduced to leading ESL teachers who were sent to an off-island professional development workshop (A. Boyd, personal communication, September 22, 2016). However, Guam's culture includes factors that uniquely influence its educational systems. Before any changes in policy—including changes that will substantially affect current ESL teachers' roles in Guam—take place, it is necessary to consider whether a change that *others* found useful will be applicable and practical in Guam. The following section considers the applicability and practicality of push-in instruction, by focusing on the target population.

Future: Should ESL Teachers Push-in in Guam?

Collaboration between ESL and content teachers may play a significant role for effective teaching practices. Also, co-teaching, if prepared well, may also lead to tangible improvements of ELLs. Although most school districts—despite the uncertainty it brings to ESL teachers—take the move towards the push-in in the Common Core era, it may not be the best option for Guam at this moment when considering unique factors pertaining the circumstances of Guam.

High Population of ELLs

First, there are too many students identified as ELLs in Guam. According to the *Guam Statistical Yearbook 2014*, total Guam public school enrollment between the school years 2008-2009 and 2014-2015 has consistently been around 30,000 with the number of teachers fluctuating between 2,200 and 2,500, while the number of students participating in the ESL program has remained around 15,000 (Bureau of Statistics and Plans, 2015). This high number of ESL students suggests that all the teachers are considered the teachers of ELLs. As articulated previously, an effective push-in model would require both content and ESL teachers' commitment to collaborate with each other in planning, teaching, and reflecting. With the high number of ELLs, it is not practical to spend an excessive amount of time to plan the lessons that accommodate ESL students in different proficiency levels. Utilizing the push-in means that the existing sheltered students are mainstreamed with the premise that ESL teachers would start pushing in. With the limited number of the ESL teachers, varying from one to six ESL teachers per school, including the coordinator, the push-in as the leading means of the ESL instruction may not be possible with such a high ESL population. For instance, according to Benavente Middle School or BMS's (2013) *WASC Self-Study 2012-2013*, the school had four ESL teachers to directly service 45 sheltered students in the 6th to 8th grades, an ESL coordinator who oversaw a total of 452 ESL students, and 45 core content subject teachers. If the push-in would take place at this school, the 45 sheltered students would be distributed to 45 core content classes that were comprised of three grade levels and five different subjects. It would be extremely difficult for the four ESL teachers to find time to plan and teach with 45 mainstream

teachers together to meet the needs of those sheltered students. The difficulty level would increase if they were to accommodate the rest, over 400 ELLs, under the consultation program.

ESL Teacher Shortage

Creating more ESL positions would be onerous as well because there are not many certified ESL teachers in Guam. In fact, numerous sheltered teachers are not certified in ESL, which means they either have an emergency teaching certificate or a content area certificate that allows teaching sheltered-content class. However, in order to perform an effective push-in ESL instruction, teachers must be specialized in the ESL discipline. One of the challenges that the push-in instruction brings is the uncertain role of the ESL teacher as discussed previously. If qualified ESL teachers claim that they do not feel competent in the push-in setting, many uncertified ESL teachers will face more challenges. In a government document, GDOE's action plan for requesting federal grant for the ESL program, states that the district would promote to increase the number of ESL certified teachers (Federal Program Division, 2012). However, the reality is that there have only been a handful of students graduating from college with ESL degrees during the past six years. From the academic years 2009-2010 to 2014-2015, only four students received a bachelor's degree in ESL while 240 received a degree in elementary education, and 15 students received a master's degree in ESL while 126 received a master's degree in special education from the University of Guam, the only public 4-year college in Guam (Bureau of Statistics and Plans, 2015). There may be different ways to become certified in ESL such as getting an endorsement in ESL with credits. However, comparing the number of graduates between the ESL majors and with other majors clearly shows the shortage of ESL teachers. Thus, the lack of qualified ESL teachers is another reason that the push-in is not a practical ESL instructional model even with the CCSS implementation. Without a sufficient number of ESL teachers to serve the high ELL population, the push-in model cannot become an effective means to provide needed support.

The Students from the FSM

Not only are the high EL population and the shortage of ESL teachers' obstacles, but also other challenges may occur from the ELLs' educational background before their arrival in Guam. A large number of the ELLs emigrating from neighboring islands to Guam come with limited educational backgrounds, and often, they are not ready for the grade-appropriate content instructions. Students from the Federated States of Micronesia or FSM, which includes Yap, Chuuk, Pohnpei, and Kosrae, comprise around 50% of the total ESL population (Federal Program Division, 2012). These students from neighboring islands are placed in age-appropriate grade levels according to the policy regardless of their prior schooling experiences, and some of these students from the FSM have very limited or no schooling experiences. The FSM Division of Statistics (2012) reports that 15% of the elementary school and 45% of the high school population were not attending school, and some students were supposed to be in high school were still enrolled in elementary school because many began their schooling late or repeated the same grades. If these students with limited education move to Guam, they would skip many years and attend high school in Guam. These unique factors from outside of Guam cannot be controlled. Of course, demanding grade-level content knowledge would not be equable for them, so they would not be ready to be mainstreamed and pushed-in. Once these students are in the public-school system in Guam, the ESL teachers can advocate for their learning with content and language through extensive modifications and accommodations to meet their language, below-grade-level content, and social needs in a pull-out or sheltered setting. The concern of the readiness for the push-in goes back to the point made earlier in the section *when to push-in* that the criteria for the determination for ELLs' participation in the push-in model should be addressed (Valdés et al., 2014). These students with limited background can be called Students with Interrupted Formal Education (SIFE), and they face enormous challenges due to their limited literacy both in their L1 and L2 (Roy-Campbell, 2012). Their needs would have to be differentiated. Thus, utilizing the push-in model may become a detrimental practice.

Conclusion

Teaching is not an independent activity, and its practice and outcomes are influenced by backgrounds and environmental factors. To determine whether push-in instruction will be most effective in teaching ELLs in the Common Core era, the first step to take is examining whether push-in would be practicable in the given context, and conducive to ELLs' learning. The current circumstances in Guam, with its high ELL population, its shortage of qualified ESL teachers, and the uncontrollable factors coming from the SIFE, weigh against now utilizing push-in as the leading ESL instructional model. The CCSS are already implemented in Guam, and how to better engage 15,000 ELLs who represent the half of the total population in the CCSS should be addressed immediately.

Implications: The Necessity for Future Studies

As part of the United States, Guam public school system adheres to federal laws and regulations and needs to be accredited as a district by Western Association of Schools and Colleges (2016). Yet, Guam is completely different from other locations in the United States, and differences in region, people, culture, and many other factors in the community contribute to the public education in Guam. Hence, special considerations need to be addressed before following the majority. The special considerations include the CCSS implementation's influences to the ESL education in Guam. Researchers in the community should immediately commit to find realizable ways to support ELLs' learning in the Common Core era by conducting empirical studies within the community. The agendas of research topics must be intentional that consider characteristics and surroundings of the population. Data must be gathered from current ESL and content area teachers who serve the ELLs. Also, what difficulties hinder from effectively teaching the CCSS to ELLs should be determined. When obstacles are identified, the policy makers of the ESL education should propose a practical model that is suitable for the population without marginalizing the voice and status of the ESL teachers. In addition, the School of Education should respond to that fact that (1) only a handful of students are studying ESL or TESOL as an academic discipline; and (2) all Guam public school teachers will serve ELLs in their classrooms. Accordingly, SOE should consider requiring an ESL education course in all of its degree programs. The challenges that Guam currently has are the reality that cannot be changed in a short period of time. ESL teachers and stakeholders in the community should pay closer attention to the shifting trend of the ESL education in the Common Core era, voice their concerns, and take the initiative to make the best choice for Guam.

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Successful Launching Undergraduate Research in Mathematics at the University of Guam

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This paper describes the successful launch of undergraduate research experiences in Mathematics at the University of Guam (UOG), with support from the Mathematical Association of America (MAA) and the National Research Experiences for Undergraduates Program (NREUP); and funding by the National Science Foundation (NSF). In the summer of 2018 and 2019, eleven UOG undergraduate students and six local high school students participated in an intensive seven-week research program supervised by four faculty members in UOG's Division of Mathematics and Computer Science (DMCS). In this paper, we discuss mentoring experiences, the logistics of NREUP and Tensor-SUMMA, results from students' research projects, and the impacts that undergraduate research has on students' future careers. This program attained the goals of enhancing the quality of undergraduate STEM education for a deeper appreciation of its disciplines, and broadening participation in the nation's STEM work force, as well as promoting enrollment in graduate schools.

Keywords: undergraduate research, mathematical modeling, game theory, coding theory

Introduction

Undergraduate research is very popular now in the United States after the National Science Foundation (NSF) have granted the funding of the Research Experiences Undergraduates (REU) program in 1987 (Hagedorn, 2017). We can see clearly the number of undergraduate students involved in research is increased from the Mathematical Association of America (MAA) Undergraduate Student Poster Sessions data; beginning in 1990 with fewer than fifteen student projects, but now more than 400 projects (Gupta, 2017). Also, the 2015 MAA Curriculum Guide request every mathematics major to be provided an opportunity to tackle a "substantial mathematical project" involving concepts beyond a single course (Dorff, 2015).

The faculty members of Division of Mathematics and Computer Science (DMCS) at University of Guam (UOG) are inspired by the successful undergraduate research experiences from professor Oh in the United States for 10 years. Oh has been a Principal Investigator (PI) on MAA National Research Experiences for Undergraduates Program (NREUP) grants (2013-2017), a PI on MAA Preparation for Industrial Careers in Mathematical Sciences (PIC Math) grants (2015-2017), a PI on CURM mini-grant (2015), a co-PI for NSF University of North Carolina Reginal Mathematics and Statistics Conference grants (2016-2017), and a director of undergraduate research sub-awarded from National Science Foundation (NSF) Historical Black Colleges and Universities Undergraduate Program (HBCU-UP) grants (2008-2012). Professor Oh with professors Nagahashi and Choi received a grant for the "Game Theory and Application" projects from NREUP, an activity of MAA, funded by the NSF in 2018 and have launched first time undergraduate research in mathematics with five undergraduate students at UOG during the summer (NREUP).

The overarching goal of NREUP at UOG was to expose STEM majors to the emerging technologies and mathematics, to provide them with the necessary training, and to actively engage them in using the skills acquired and to increase the math awareness at UOG. We also wanted the participants to acquire research skills and self-confidence to make them successful in their further college career and competitive when applying for graduate programs, internships and professional schools. Furthermore, the NREUP program was a great first project to start a fruitful collaboration between the mentors and home institution at UOG. We aimed to recruit and select students who had the requisite talent and interest, were self-motivated and disciplined, and could work well with others. All applicants had to complete Calculus II with at least a "B" or higher and submit a personal statement and an unofficial transcript. In 2018, we selected five students (2 juniors and 3 seniors) out of eight applicants.

Our math faculty were aware of importance of research experiences for young students from successful 2018 NREUP experiences at UOG. Professors Oh, Nagahashi, Choi, and Aquino received the renewal 2019 NREUP with projects "*Coding Theory and Game Theory*" for six UOG undergraduate students and got additionally a 2019 Tensor SUMMA

grant The Young Scholars Research Experiences in Mathematics (YSREM) from MAA for local high school students. We selected six enthusiastic and talented high school students from eleventh and twelfth grades to participate in research experiences in mathematical thought and effort. The goal of YSREM was to foster the high school students in mathematical research to further knowledge in a field of study and to get the opportunity towards higher education and careers as mathematics researchers from the underrepresented minority groups in Guam (Tensor-SUMMA). The YSREM program has run concurrently with NREUP as a single program at UOG during the summer in 2019. UOG's six undergraduate research students in NREUP served as one-on-one mentors and worked as collaborators in the team research projects under their faculty mentors for seven weeks. In 2019, we had a bigger summer research program; a combination of two programs, one more faculty (4 mentors), two mathematical research areas, six undergraduate students of UOG and six high school students in Guam. We selected six undergraduate students (1 freshman, 4 sophomores, and 1 junior) out of 13 applicants from UOG and 1 applicant from the United States. Six high school students out of 6 applicants were selected for YSREM.

Undergraduate Research Program: NREUP (2018, 2019) and Tensor-SUMMA (2019)

Our NREUP program in 2018 and joint NREUP and Tensor-SUMMA programs (2019) were intensive seven-week summer research programs. During the seven weeks, the participants were trained in all aspects of research. In the first week, mentors offered programming tutorial sessions in Maple, MatLab, and LaTeX. Students were introduced to the basic of Linear Algebra, Differential Equations, Coding Theory, and Game Theory for the research projects.

In the second week, the participants selected their projects and were split into groups; 2 teams in 2018 and 4 teams in 2019. The research projects were on vaccination game theory for both groups in 2018; two projects were on coding theory and two groups are on vaccination game theory in 2019. The project areas and research teams were determined after one-on-one interviewing students by faculty mentors. Each group then worked on finding the background literature and chooses their research topics. For 3-6 weeks, students constructed, implemented and analyzed their mathematical models. Each team presented their weekly work to NREUP participants and faculty mentors on every Friday using beamer. They learned how to accept the comments and answered for questions from audiences and were improved oral presentation skills. Furthermore, the participants had daily team meeting with their mentor(s) and worked with teammate(s) so that they learned how to make professional communication and resolve their team's conflicts. The last week students finalized their projects and worked on final presentation at DMCS colloquium, open talk to audiences inviting family, friends and faculty, and then formal research reports turned into manuscripts. It was training of oral and written communications.

Results

Overall, the research projects were very successful. Participants in 2018 NREUP presented at various conferences, most notably at 2019 Joint Mathematics Meetings (JMM), University of North Carolina at Greensboro Regional Mathematics and Statistics Conference (UNCG RMSC) in November 2018, and DMCS math colloquium at UOG 2018. The JMM is the largest math conference in the world. Vince Campo delivered an oral presentation and Robert Babac presented at poster session and he won a best presentation award at the 2019 JMM. Two of five in 2018 NREUP participants became middle school math teachers in Guam; three of them taught remedial courses of math from 2018 NREUP, and three participants of 2018 NREUP applied to graduate schools in the United States.

All participants in 2019 NREUP and 2019 Tensor-SUMMA presented at mathematics colloquium in DMCS at UOG in 2019. All four groups' abstracts were accepted to present at MAA poster sessions in 2020 JMM, Denver Colorado, and three students received travel grants from American Mathematical Society (AMS) to present their research results at 2020 JMM. Four students from 2019 NREUP will attend and present at 2020 JMM. Currently mentors are preparing manuscripts of the work resulted to publish papers with coauthors of undergraduate students from both 2018 NREUP and 2019 NREUP research results.

Undergraduate Research Projects

We describe six projects successfully completed by two years NREUP undergraduate students under our mentors.

Project 1: Dog Vaccination and Quarantine: A Mathematical Approach on Rabies
This project in vaccination game theory was completed by undergraduate students Vince Campo (junior math major) and John Palacios (senior math major) under the supervision of professors Oh and Nagahashi. It was funded by the 2018 NREUP. China, the world's second leading country in Rabies, is an area of interest when analyzing the lethal disease. This research project focused on studying strategies to effectively combat the disease by means of dog vaccinations and quarantine. When working on the project, construct mathematical models based on differential equations, use simulations to help them understand the basic principles of the models studied, as well as interpret equilibria, phase portraits and component plots. Using data based in China, we analyze the cost-benefit for individual from the dynamics of mathematical model of Rabies and decide whether a single strategy is dominant over the other, or a mixed strategy involving both is feasible.

Project 2: Analyzing Rotavirus Vaccinations Using Game Theory
This project in vaccination game theory was completed by undergraduate students Jacob Aquiningoc (senior math major), Robert Babac (junior math major), Jayson Morales (senior math major) under the supervision of professors Oh and Nagahashi. It was funded by the 2018 NREUP. Rotavirus, a highly contagious virus transmitted via the fecal-oral route, is commonly known to cause gastroenteritis, a disease inducing symptoms such as diarrhea, fever, abdominal pain, and vomiting in children under five. The virus, first discovered in 1973, currently causes 2 million hospitalizations and roughly 500,000 deaths per year. Two vaccines, Rotarix (RV1) and a vaccine given at birth (RV3-BB), have been shown to decrease the occurrence of severe gastroenteritis. By using a mathematical model, we analyze the transmission of rotavirus. With Game Theory, we construct a game theoretic model to determine the optimal vaccination strategies between both vaccines. In conclusion, we find the neonatal vaccine was not as effective in treating the virus compared to the Rotarix vaccine.

Project 3: A Game-Theoretical Approach in Modeling a Potential SARS Outbreak with Multiple Control Strategies
This project in vaccination game theory was completed by an undergraduate student Regina Dominguez (sophomore double majors in math and computer science), Aurienne Cruz (senior high school) and Brian Lee (junior high school) under the supervision of professors Oh and Aquino. It was funded by the 2019 NREUP and 2019 Tensor-SUMMA. Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease that is caused by the coronavirus SARS-CoV. SARS is a nosocomial disease that is transferred through the air, making it highly contagious. We construct a game-theoretic model of SARS in which individuals choose whether to participate in either vaccination based on proposed vaccine data or education with quarantine against SARS in order to maximize their own benefits. We find that SARS is eliminated when the relative cost of education and vaccination with respect to their infection costs are zero, respectively. However, the optimal Nash Equilibria of education and vaccination are close to their herd immunity within 5% when the relative cost of education is allowed up to a 10% increase while the relative cost of vaccination is allowed up to a 0.6% increase.

Project 4: Vaccination and Education to Combat Yellow Fever: A Game Theoretical Approach
This project in vaccination game theory was completed by undergraduate students Jalene Manibusan (sophomore double majors in math and civil engineering), Jovic Caasi (freshman double majors in math and computer science), and high school students (junior high school) under the supervision of Oh and Aquino. It was funded by the 2019 NREUP and 2019 Tensor-SUMMA. Yellow fever is a vector-borne disease found in parts of South America and Africa, and had recent outbreak occurring early 2019 in Brazil. It is transmitted by the mosquito Aedes aegypti. Strategies used to combat the mosquito population and prevent mosquito bites. In this research, we construct a game-theoretical model to compare both vaccination and education strategies in which individuals may choose to protect against yellow fever and maximize their own benefits, effectively balancing the cost of protection and the risk of contracting yellow fever. We find critical thresholds for the costs of vaccination and education, above which no one will use the vaccine or get education.

Project 5: A Magic Trick Using Reed-Solomon Codes
This project in coding theory was completed by undergraduate students Angelika Argao (junior double majors in math and computer science), Abigail Pobre (sophomore math education major), and Alex Leon Guerrero (junior high school) under the supervision of professor Nagahashi. It was funded by the 2019 NREUP and 2019 Tensor-SUMMA.

Error detecting and error correcting codes comprise one of the key areas in coding theory and can be applied to various real-life situations. Reed-Solomon codes, in particular, play a vital role in ensuring that data received via storage devices—such as CDs and DVDs, and mobile and satellite communication—is error-free. On a similar scale, the application of these codes can be demonstrated using magic tricks. With some help from some cards, a cube, and a little bit of magic, we can guess the correct color and number secretly chosen by an audience member! We explore how this magic is constructed through the use the Galois field of 8 elements and Reed-Solomon codes to generate the correct answer.

Project 6: A Ternary Code Magic Trick
This project in coding theory was completed by an undergraduate students Gino Reyes (sophomore math major) and a high school student Angela Zhang (junior high school) under the supervision of Professor Choi. It was funded by the 2019 NREUP and 2019 Tensor-SUMMA. Although coding theory is most known for its applications in technology, it can also be applied to create a magic trick. A popular example involves the use of binary numbers a Hamming Code, where a performer can guess the number an audience member secretly chooses. For our trick, we will also use Hamming Code. The main difference is that we will be implementing ternary. Instead of using binary like the previous trick, which allows an audience member to choose one of sixteen different numbers, using ternary will allow the audience member to choose one of twenty-seven numbers. Furthermore, we have created models that will allow the magic trick to run smoothly without any need to perform calculations.

Research Participant Reflections

In students' reflection essays at the end of the program many of them stated how they learned to work in a team and grew to like group work as a result of the program. They said that the research is challenging but rewarding. The students acquired research skills and self-confidence, which are going to make them successful in their further college career and competitive when applying for graduate programs, internships and professional schools. Working with my mentors has inspired me to strive for bigger goals and has allowed me to have more confidence in my abilities. Here are sample statements from research participants:

- o Learning and working as a group made research more enjoyable. Although difficult, working as a team allowed me to overcome obstacles and further develop my communication skills. Working closely with my professors allowed me to better my understanding of the research that I was conducting.
- o Before starting the NREUP, I believed this summer research was going to be stressful and labor-intensive. I was not wrong. These past seven weeks may have been the most stressful summer I have ever had, but I do not regret. Now, I can say that I have completed a summer of mathematical research where I have learned valuable lessons that are not normally taught at the university. I am extremely thankful for being given the opportunity to partake in this summer research in which I benefited greatly from.
- o The research program was one of the most challenging things that I have done. This was my first-time doing research that was math related. We don't have any math classes that required us to do any research. I am glad that I decided to do this research program. It has given me the opportunity to learn about math research. I believe that this experience will affect my decision to go to graduate school. I'm not sure if I want to do research in the future, but I still want to further my education.
- o During the research the most beneficial part of it was the weekly presentations where each group will showcase the progress, they made for that work week. It really helped put to perspective the amount of progress that we students made over the weeks. We went from really stressed to advancing toward completion. I also believe that it helped in the presentation skills, which is not so easy since explaining complex mathematics methods to the general public. These presentations also seemed like goals within the project time frame, where a group must meet a certain quota so that we could be on track. By having the right inspiration, and the right guidance, I was able to accomplish the research that had seemed unobtainable, although there is much more work in the future ahead, I know that this program had set me on my way to accomplishing my goals.
- o With this research experience, I was able to further enhance my communication, public speaking, and teamwork skills while learning the basics of Latex, Matlab, and Game Theory. In the start, I was hesitant and nervous but also excited as I did not know what to expect; however, I knew this experience would allow me

to see more into what mathematics could be. My goal for this experience was to learn more of what mathematics could offer and give me options for what I would like to do in the future, and with the help of my mentors, professors Hyunj, Nagahashi, and Choi, I was able to achieve the goal. When we first started our research with lectures, I was surprised at how little I knew.

o Where have the last seven weeks gone? They've gone to sweat, tears, and sleepless nights. This research program was very enriching to me. I learned more about coding theory and feel slightly more prepared for the challenges I will face in graduate school if I choose to apply. This experience has been unlike anything I have ever done before. I spent a lot of time working on it and thinking of ways on how to present it. I feel that by participating in this program I am more confident in myself and more confident in facing the challenges ahead of me.

o I have never conducted research as part of a team. While I had not been keen on working with people I did not know well, and though we did not work so smoothly together during the first few weeks, I found the experience of working as a team to be extremely valuable. Once my team members and I were comfortable and accepting of our differences, we were able to communicate effectively in order to get the work done. I would genuinely agree to work with them again if given the chance. Overall, being part of the NREUP has been an extremely rewarding experience. Now that I have had some practice in research, I am more open to the idea of continuing to graduate school. While the research I have done is not as rigorous as true graduate work, at least I now have some idea of what it would be like. After having taken many classes as a math major, quite honestly, I grew somewhat tired of math. I could have easily forgotten everything I have learned once I stepped out of that last math class. But, because of this program, my love for math has been reignited. I am more curious and open to learning even more math, and I am more confident in my research abilities. Truly, this experience could not have been possible if not for the MAA and NSF, and most importantly, if not for the collaboration of my student colleagues and the guidance of our mentors. For this NREUP and everyone involved, I am grateful.

o I had an enjoyable experience for this research program. In all honesty, there were times in which I stressed out but the satisfaction of accomplishing a task or discovering something new always made up for it. I believe that my team has displayed a lot of effort in our work. Over time, we managed to improve our communication with each other, and we were always able to settle any disagreement instantly. We have combined our ideas together and created multiple magic tricks throughout this program. I'm pleased with the outcome of this program and I hope to participate in another one in the near future.

o This program has been very fruitful for me. I saw myself grow as our project grew, and this is all thanks to how the program was set up. The weekly presentations where we continuously switched our roles in the presentation, allowed us to become familiar with our project. I really do feel like I know so much about this project, when at first, I did not. When we first started graphing a lot of our results, I saw a graph that looked like we were told it should look and so I got excited. But now, I can explain what is happening in that graph and so I know now that my ability to analyze results has grown throughout this program. All I could have asked was for me to come out of the program a stronger researcher and that is exactly what happened. I do not have any recommendations for how the program could be better because in my opinion, it was as good as it could get. Our mentors always made sure we were okay and guided us throughout the process, we were in a research friendly environment, and we had access to anything we could have needed. The only thing left was for us to go through the research process, and that's what we did. I had a great time and I am thankful for the opportunity this program has given me.

o I have learned many new things these past seven weeks and gained valuable research experience. The first week was packed with learning mathematical background as well as learning how to use programs such as Matlab and LATEXto assist us in our research. While learning the mathematical background needed, I was able to get a glimpse of Linear Algebra, one of the courses I will be taking next semester, as well as Differential Equations. It inspired me to take a Differential Equations class in the future so that I can better understand the subject. LaTeX was important to use to write reflections as well as to create our presentation and research paper. Matlab was useful to do all the complicated solving and creating graphs.

o I feel much more confident in what I can do after college and much more confident in my skills overall. It was a bittersweet feeling leaving lunch because everyone started hugging and making it feels sad. Then I realized that we spent the last 7 weeks together and today was the end. I was too focused on finishing that

I completely forgot that we don't have to meet every day anymore from 9-5! So now I would like to say: Thank you Dr. Oh and Dr. Aquino. I mean this sincerely when I say that my group would not have made it this far if you guys weren't there with us every single day.

o The past seven weeks went by incredibly fast. I remember that during the first week of the research, each day felt very long because I was learning a wide variety of new information in the span of a week; however, after the first week, I got used to the 9-5 schedule and the days seemed to go by much faster after we started our research. This program was an invaluable opportunity to gain quality research experience. I have found that within seven weeks, I have learned significantly more about mathematics and scientific research. I am very grateful to my mentors for guiding me through my first mathematical research, and I am also extremely appreciative of my group for working with me and accommodating my schedule. I will recommend the REU to my peers who are interested in math research.

o After 7 weeks of research, I feel exhausted. However, I have no regrets about joining this program. It has been an amazing experience for me all throughout, and I have learned a lot. I have always been very interested in mathematics but haven't really had opportunities to apply it in real life situations outside of school homework and tests. As such, using math for something like predicting the course of an endemic was extremely new and fun. The chance to meet and work with new people was also great. Although we experienced some difficulties at first, our group became close and worked well together. What enabled us to work well together is our drive to complete our work. Although we had our arguments over meeting outside of our required hours and the way certain things should be done, in the end, we overcame the obstacles to complete our project. The work itself was hard and frustrating, but with its completion, I felt great and relieved. The hardest week was probably the first week, which was the literary review. Finding a disease to research for almost 8 hours a day was mentally and physically exhausting. However, the math itself wasn't hard, mostly because we had the guidance of our mentors Dr. Oh and Aquino.

o I was confident in my math skills until I started working with everyone. I had a lot of help from many people to help me understand things, for that I'm grateful. It was very hard in the beginning but over time it got a little easier being in a group and having others explain to me in their own words for all the things I didn't understand. I am so pleased with the new connections I made with my colleagues. It was a great experience. Struggling together is better than struggling alone.

o In the first week, I was exposed to new mathematics (coding theory and game theory in the context of diseases) and tools (LaTeX, MatLab, and Sage). This broadened my horizon, and I found myself looking up supplementary material on my own time as soon as I got home. I'd say that the first week sparked my interest in the areas of research covered in the program. I enjoyed the program very much. On one hand, it made sure that my summer was not wasted on mindless idling and that I maintain my sharpness over break. On the other hand, I got to learn and research a topic (coding theory) that I never gave thought on prior but is oh so interesting. I think this program really sparked my interest in math research in the future. I will be on the lookout for even more opportunities like this and consider mathematics as a good direction to look to when advancing in my education and eventually choosing a career. The final thing that I got out of this program that I treasure very much is the group of friends I was able to make during the program. I made many memories with new friends, such as eating lunch in a tree and talking about our favorite TV shows together.

o Overall, I enjoyed this program, and learned a lot. The first couple of weeks were a little rough, but by the end I understood my topic and became a lot better at using Sage math and LaTeX. This program gave me an introduction into the more conceptual side of mathematics that I now find very interesting. Before the program I knew I wanted to major in engineering, but now I want to minor in math, or even double major.

Conclusion

We have launched successfully undergraduate research program at UOG last two years. Most important factor to provide an undergraduate research program is research funding. Even so, we believe that it is the faculty mentors, not the funding, that plays the most crucial role in students' success. Faculty mentors need to select appropriate research problems that are challenging enough to ignite the natural intellectual curiosity of the students, yet do not require lots of background knowledge. Problems that students can get started on quickly lead to initial successes that give students the confidence and interest to continue. In addition, faculty mentors need to believe that their

students can be successful and achieve their goals. Mentors should be supportive and provide the right help at the right time (Gupta, 2017). As stated in students' reflections, even though the team working on this research felt momentarily discouraged, the mentors explained that this often happens. In this way, research differs from working on homework problems: in that the latter usually involve unique and clearly sufficient answers. This was a valuable experience in many ways. Students especially appreciated and enjoyed giving and receiving constructive criticism, seeing how their presentation skills improved significantly through the duration of the project. Facilitators fostered a friendly and supportive atmosphere between the students. In their reflection essays, many stated how they learned to work in a team, and grew to like group work, as a result of the program.

Overall, we feel that the research programs were very successful; and we fully expect that at least two papers derived from the research will be published in refereed journals. More importantly, the 17 participating students acquired research skills and confidence: which will support success in their college careers and help them to compete when applying for graduate programs, internships, and professional schools. Moreover, this may pave the way for further, fruitful collaborations between mentors in the DMCS and elsewhere in the University.

Acknowledgements

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Assessment of Problem-Solving Skills Based on Bloom's Revised Taxonomy in Relation to Critical Thinking and Quantitative Reasoning

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This paper describes Bloom's Revised Taxonomy as a framework for designing assessments of critical thinking and quantitative reasoning. The author presents an assessment of problem-solving skills among college freshmen in General Education courses. By analyzing the outcomes using the proposed framework, the author obtained key insights for instructional improvement. Bloom's Revised Taxonomy is convenient for visualizing assessments and interpreting their outcomes in reference to Bloom's hierarchy. The taxonomy provides for a visual interpretation of the results, and supports recommendations for improvement

Keywords: Bloom's Taxonomy, assessment, student learning outcome, problem-solving, quantitative literacy, critical thinking

Introduction

Bloom's (1956) Revised Taxonomy of cognitive skills offers a natural framework for assessments of problem-solving skills in mathematics. We assess first year college students who take mathematics as part of their general education requirement. A freshman level basic mathematical applications course is offered to satisfy the quantitative reasoning requirement for critical thinking and problem-solving skills. Critical thinking is assessed as an ingredient of understanding and solving word problems. A traditionally challenging task, *solving simple word problems,* is an indispensable ingredient of quantitative literacy that all students should acquire, following institutional level learning outcomes. Our assessment aims to find out how students perform in relation to quantitative reasoning and critical thinking expectations through problem-solving.

Proposed Framework for Problem-Solving Assessment

Problem-solving is an integral element of quantitative literacy and quantitative reasoning in connection to critical thinking. In fact, no quantitative literacy can be attained without the ability of solving simple word problems. A word problem is a short story about numerically expressed quantities and relations among them with some question(s) posed. The solution aims to answer the posed question(s).

Our general framework of assessment was inspired by the seminal work, *Taxonomy of Educational Objectives: The Classification of Educational Goals*, edited by Benjamin S. Bloom (1956). This book presented the first systematic taxonomy of knowledge and cognitive processes for educational purposes. We use a modified version, Bloom's Revised Taxonomy of learning and educational objectives as published by Anderson et al. (2001). In this framework, a twofold hierarchy is presented to characterize assessed skills. The Knowledge Dimension consists of the following four categories: (1) factual; (2) conceptual; (3) procedural; and (4) metacognitive knowledge (and considered in this order from concrete to abstract).

The Cognitive Process Dimension is divided into six categories from lower order thinking skills to higher order thinking skills: (1) remember; (2) understand; (3) apply; (4) analyze; (5) evaluate; and (6) create.

To describe our assessment, we will use this twofold hierarchy as a coordinate system with the horizontal axis representing the Knowledge Dimension and the vertical axis representing the Cognitive Process Dimension. In honor of Benjamin S. Bloom, we will call this construction *Bloom's coordinate system*. In Bloom's coordinate system a point or a range of points can be identified by the corresponding Bloom coordinates (See FIGURE 1).
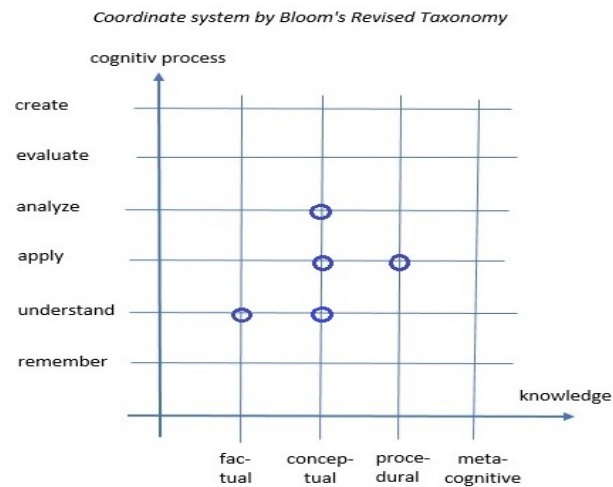
Coordinate system by Bloom's Revised Taxonomy

FIGURE 1. Coordinate system by Bloom's revised taxonomy

As an example, problem-solving involves interpreting and translating the "story" of a word problem into mathematics, by the following three skills: (1) extracting information (factual/understand); (2) setting up variables and equations (conceptual/understand, apply, and analyze); and (3) solving them (procedural/apply) in order to answer the posed question(s). These steps of problem-solving can only be performed by the adequate knowledge and the necessary cognitive processes. In order to map the assessed skills into Bloom's coordinate system, we identify its location by Bloom coordinates that may refer to *individual points* or a *range of points*. We call these points *significant points*. For example, in this model, "extracting information" corresponds to a significant point with Bloom coordinates 'factual' and 'understand,' while "setting up equations" corresponds to a range of significant points, with first Bloom coordinate 'conceptual' and second Bloom coordinate range 'understand, apply, and analyze.' This mapping of problem-solving steps and mental skills into Bloom's coordinate system helps to visualize and describe our assessment. Beyond assessing the individual steps of problem-solving and evaluating them by the corresponding rubric, we also obtain an interpretation of the assessment results, in relation to this systematic theoretical framework, in Bloom's coordinate system.

Developments of Theoretical Background in the Literature

A wealth of resources is available in the literature to place problem-solving assessments in a general theoretical and practical context. In order to see the advantages of taking Bloom's Revised Taxonomy as the framework for our assessment, we shortly overview some scholarly papers and books that detail different approaches and are useful in designing and conducting successful assessment of problem-solving skills.

Quantitative Literacy and Quantitative Reasoning

In quantitative literacy and quantitative reasoning, significant efforts have been made at the national level to provide background to problem-solving assessments. A comprehensive research report, titled *Assessing Quantitative Literacy in Higher Education: An Overview of Existing Research and Assessments with Recommendations for Next-Generation Assessment*, authored by Graf et al. (2014), is an excellent survey of existing research and assessment practices of quantitative literacy in higher education.

This report details the approach of the American Association of Colleges and Universities (AAC&U) expressed through the *Liberal Education and America's Promise* (LEAP) initiative that was developed by the national organization to identify quantitative skills as a crucial element of its frameworks. The LEAP initiative resulted in, among others, the development of a set *of Valid Assessment of Learning in Undergraduate Education* (VALUE) rubrics, including a comprehensive rubric for quantitative literacy. The report also discusses the quantitative literacy and problem-solving learning outcomes established by the Mathematical Association of America (MAA).

AAC&U (Rhodes, 2010) defines quantitative literacy as follows:

"Quantitative literacy (QL)—also known as numeracy or quantitative reasoning—is a 'habit of mind,' competency and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate)." (p. 35)

MAA (Sons, 1996) places emphasis on five learning outcomes of quantitative literacy: "A college student who is considered quantitatively literate should be able to:

o *Interpret* mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them.
o *Represent* mathematical information symbolically, visually, numerically, and verbally.
o Use arithmetical, algebraic, geometric and statistical methods to *solve problems.*
o *Estimate* and *check* answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.
o *Recognize* that mathematical and statistical methods have limits." (para. 6)

The authors of the above report propose their own operational definition of a quantitative literacy assessment framework, called Next-Generation Assessment Framework, that includes a description of mathematical problem-solving skill areas:

Quantitative literacy is the comprehension of mathematical information in everyday life, and the ability to detect and *solve mathematics problems* in authentic contexts across a variety of mathematical content areas. Solving these applied mathematical problems includes the skills of (a) interpreting information, (b) strategically evaluating, inferring, and reasoning, (c) capturing relationships between variables by mapping, interpreting, and modeling, (d) manipulating mathematical expressions and computing quantities, and (e) communicating these ideas in various forms. (para 3)

These learning outcomes and skills can be approximately mapped into Bloom's coordinate system, as illustrated in FIGURE 2.
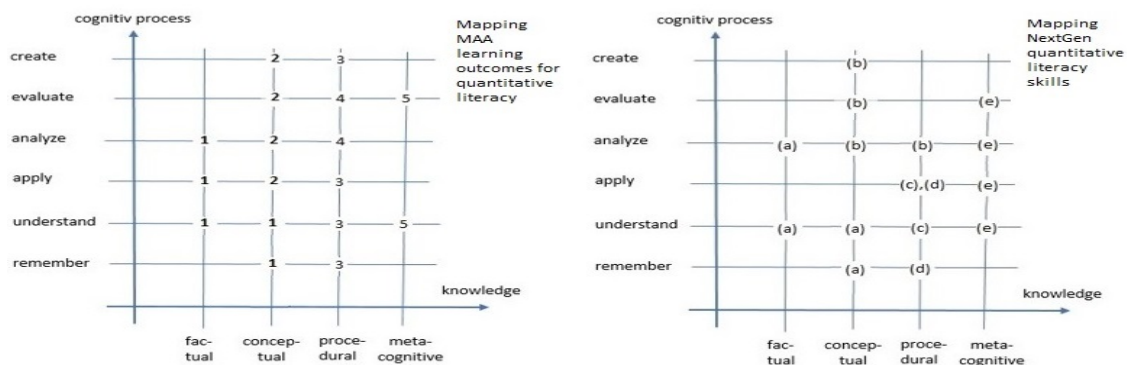

FIGURE 2. Mapping learning outcomes and skills into Bloom's coordinate system

In both the approaches of MAA and the Next-Generation framework, problem-solving is emphasized as essential part of quantitative literacy. The involved skills, knowledge, and cognitive processes nicely fit into the general framework of Bloom's Revised Taxonomy.

Practical and Dynamical Approaches for the New Century

Let's continue our overview of the literature by the classic book *How to solve it* by Pólya (1957). This is still an excellent resource book for breaking down and categorizing different mental processes necessary for problem-solving. The book contains an extensive list of questions to invoke basic mathematical knowledge and stimulate cognitive processes at each step of problem-solving. The approach of successively posing questions until a solution is found also enhances critical thinking as an essential ingredient of problem-solving.

Montague and Warger's (2015) book, *Solve it! A Practical Approach to Teaching Mathematical Problem-Solving Skills*, focuses on practical aspects of the learning process of problem-solving, discussing it in relation to critical cognitive and metacognitive skills and processes.

Capraro et al. (2013), as seen in Table 1, in their research paper *Assessing Students' Mathematical Problem-Solving and Problem Posing Skills*, emphasize the cognitive framework of problem-solving assessments and demonstrate practical performance rubrics for both problem-solving and its inverted task, problem posing. As a sample, we include here the rubric applied for problem-solving skills.

Table 1. The Analytic Scoring Scale Used by Capraro et al. (2013); from Charles, et al. (1987)

Understanding the problem	2	Complete understanding of the problem
	1	Part of the problem misunderstood or misinterpreted
	0	Complete misunderstanding of the problem
Planning a solution	2	Plan could have led to a correct solution if implemented correctly
	1	Partially correct plan based on part of the problem being interpreted correctly
	0	No attempt, or totally inappropriate plan
Getting an answer	2	Correct answer
	1	Copying error; computational error; partial answer for a problem with multiple answers
	0	No answer, or wrong answer based on an inappropriate plan

Another research paper, *Potential for Assessing Dynamic Problem-Solving at the Beginning of Higher Education Studies* by Csapó and Molnár (2017), provides a detailed analysis of the dynamical problem-solving skills of entering freshmen in colleges. The authors stress the need of new kind of assessments in higher education. Their main contention is to assess the entering freshman population in a comprehensive way employing state-of-the-art theoretical and technological advances.

Csapó and Funke (2017) edited a volume of collected essays, titled *The Nature of Problem-Solving: Using Research to Inspire 21st Century Learning*. This work is devoted to describing the nature of problem-solving in education for the new century. They discuss the development, the assessment, the analytical and mathematical aspects of problem-solving, and its complexity and uncertainty in the technological age. Many empirical results and new indicators are presented. They introduce the concept of *minimal complex systems* that are useful for interactive problem-solving. This idea provides an excellent way for designing simple but comprehensive assessments. Problem-solving is a complex mental skill that cannot be understood without exploring its knowledge and cognitive dimensions. This complexity is to be reflected in any assessment. However, the assessment itself should avoid unnecessary high complexity. A minimal complex system would strike a good balance between posing too simple or too complex questions. Our minimal complex problem type for our problem-solving assessment of freshman college students is the Two Numbers Problem, a simple story about two unknown integer numbers that students should identify.

Bloom's Revised Taxonomy of Cognitive Skills as a Framework for Problem-Solving Assessment

There have been several reports of using Bloom's Taxonomy of cognitive skills for assessment is higher education. A report by Swart (2009), titled *Evaluation of Final Examination Papers in Engineering: A Case Study Using Bloom's Taxonomy*, distinguishes higher order and lower order examination questions based on Bloom's Taxonomy, and recommends a balance between the two kind of questions for final examinations.

Mayer (2002) presents a report about assessing problem-solving skills based on Bloom's Taxonomy, *A taxonomy for computer-based assessment of problem-solving*. To design an efficient computer-based assessment for problem-solving, the author considers 19 types of cognitive processes that can be classified into the six major categories of Bloom's Taxonomy.

The indication that Bloom's Revised Taxonomy provides a framework for problem-solving assessment is also evident in Kusmayadi et al. (2018), *Analysis of difficulties in mathematics problem-solving based on revised Bloom's Taxonomy viewed from high self-efficacy*. They use Bloom's Revised Taxonomy of cognitive skills for analyzing the difficulties posed by problem-solving, restricting their assessment to two categories of the knowledge dimension, the conceptual and procedural knowledge.

The literature supports our approach of using Bloom's Revised Taxonomy to design and conduct problem-solving assessment for freshman college students taking the general education course offering, Basic Mathematical Applications, via a minimal complex problem type, the *Two Numbers Problem*. In what follows, we provide a detailed report of this assessment.

Background and Purpose

Critical Thinking and Quantitative Reasoning Assessment Through Problem-Solving via Pre- and Post-Test and Course Embedded Questions

The assessment we conducted focuses on the following institutional level and general education learning outcomes: Mastery of critical thinking and problem-solving; Mastery of quantitative analysis; Using investigative and analytical skills to explore complex questions and solve challenging problems; Synthesizing information in order to examine alternatives and arrive at reasoned conclusions; Representing information in numerical, symbolic, and graphical forms; and Accurately calculating quantitative terms.

These outcomes are directly related to mathematical skills via critical thinking, problem-solving, and quantitative reasoning. The assessed course, Basic Mathematical Applications, is a mathematics course directly addressing the listed learning outcomes for the general student population. In this course, critical thinking and quantitative reasoning are assessed through problem-solving skills.

Assessment of Learning Outcomes Based on Bloom's Revised Taxonomy

The general framework of our assessment is Bloom's Revised Taxonomy of learning and educational objectives we have described above. The assessment was placed in the *factual, conceptual,* and *procedural* range of the Knowledge Dimension and in the *understand, apply*, and *analyze* range in the Cognitive Process Dimension.

In the Knowledge Dimension, students had to utilize (a) factual knowledge of arithmetic operations, (b) conceptual knowledge of describing the result of comparison of two numbers, and (c) procedural knowledge of how solve a system of two equations. In the Cognitive Process Dimension, on the other hand, it was required that students (a) understand the meaning of arithmetic operations and the outcome of comparing two numbers, (b) apply the substitution or elimination method to solve a system of two equations, and (c) analyze English sentences to extract mathematically exact information.

Minimal complex *Two Numbers Problems* were designed to distinguish different levels of knowledge and cognitive processes. As an example, let's see a typical *Two Numbers Problem*: The sum of two numbers is 72. The triple of one of these numbers is greater by 6 than the double of the other. What are these numbers? The steps of solving *Two Numbers Problems* involve: (a) setting up two variables (conceptual/ understand), (b) writing down an equation for the first piece of information given (factual/understand), (c) writing down a second equation for the second piece of information (conceptual/understand, apply, analyze), and (e) solving the system of two simple equations by substitution or elimination (procedural/apply) with checking the solution and answering the question.

Again, the Bloom coordinates of significant points or range of significant points representing the necessary skills in

Bloom's coordinate system are indicated in parentheses. By mapping these skills, a contiguous region containing the identified significant points is created. This region is the "shape," a visual representation, of our assessment.

An advantage of the framework we propose is exactly this *visual feature*. Beyond capturing statistical information, mapping the problem-solving assessment into Bloom's coordinate system and exhibiting its shape also provides a visual understanding to interpret the assessment result with the purpose of identifying the strengths and weaknesses of students. In fact, every assessment can be mapped into Bloom's coordinate system so that it will have a visual "shape" containing its significant points (see FIGURE 3). Following a systematic color coding that reflects the assessment result, this region with its sub-regions representing the assessment will be colored. The coloration is done in a way that our students' progress between different rounds of the assessment can be traced visually. Overall, a better picture of areas where improvement is needed will be obtained.
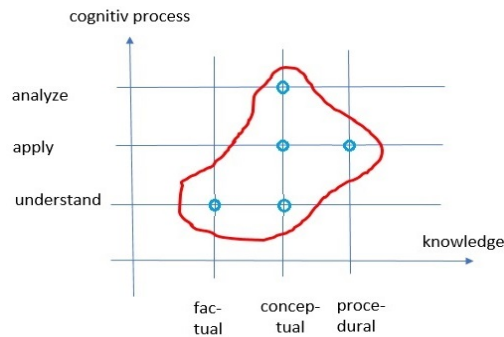

FIGURE 3. The shape of our problem-solving assessment with 5 significant points in Bloom's coordinate system

Methodology

The assessment of problem-solving skills consisted of a Pre-Test and two Post-Tests with embedded questions. Students were posed simple *Two Numbers Problems*. The Pre-Test was given as an embedded question in a Take-In Assessment at the beginning of the semester. Two separate rounds of Post-Test questions were administered: an embedded question in a Regular Test during the semester in Round 1 and another embedded question in the Final Test at the end of the semester in Round 2. The following *Two Numbers Problems* were posed.

Pre-Test Take-In Assessment: I have 3 more dimes in my pocket than quarters. When I multiply the number of dimes by the number of quarters, I obtain 54. How many dimes and how many quarters are in my pocket?
Post-Test, Round 1 embedded question in Regular Test (as in the example above): The sum of two numbers is 72. The triple of one of these numbers is greater by 6 than the double of the other. What are these numbers? Sample solution (below) of the Post-Test, Round 1 problem: Let the two numbers be and x and y. Then:

equation 1:	$x + y = 72$
equation 2:	$3x = 2y + 6,$
so	$y = 72 - x$ and $3x = 2(72 - x) + 6,$
working this out we get:	$3x = 144 - 2x + 6, 5x = 150, x = 30$ and $y = 42.$

Checking:	30 + 42 = 72. 3(30) = 90, 2(42) = 84, 90 is greater by 6 than 84.
Answer:	The two numbers are 30 and 42.

Post-Test, Round 2 embedded question in the Final Test: The sum of two numbers is 100. The double of one of the numbers is greater by 5 than the triple of the other number. What are these two numbers?

The assessment included a Comparison Group result with additional data on problems-solving of *Two Numbers Problems.* This data was collected before the current assessment for 4 years, including Pre-Test and Post-Test statistic for comparison purposes. The Comparison Group result supported our overall findings.

The sample solution above directly follows the steps of problem-solving. It begins with setting up a simple equation for the sum of two numbers. Then, comparing two multiples of the two numbers follows. The obtained information is captured by another equation for the two variables, as seen in equation 2 in the sample solution. It is a common error to make a +/- error here, by writing incorrectly that $3x + 6 = 2y$ or $3x = 2y – 6$ rather than the correct equation 2 above. At this point, critical thinking and a careful analysis of the English sentence stating the outcome of the comparison helps to avoid sign error. Accordingly, a rubric (Table 2) was used to evaluate the answers.

Table 2. Evaluation Rubric

10 points (100 %)	8 points (80 %)	7 points (70 %)	4 points (40 %)	0 points (0 %)
Correct Solution	Good Understanding	Basic Understanding	Some Good Idea	No Good Idea
(two correct equations with correct solution and correct answer)	(two correct equations with computational error in the solution)	(one correct equation with sign error in the second)	(one correct equation only)	(no correct equation)

The above rubric is translated into Bloom's coordinate system, as well. The "shape" of the assessment is divided into four smaller regions: I, II, III, and IV, containing the 5 significant points, in a distribution of 1, 2, 1, 1 point, respectively, as seen below (FIGURE 4).
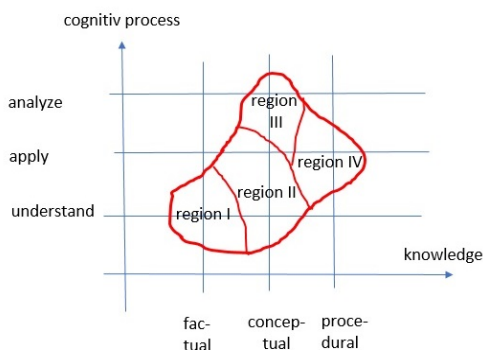

FIGURE 4. Regions of the assessment containing the 5 significant points in Bloom's coordinate system

Then, the rubric is mapped into the regions as follows:

outcome	correct solution	good understanding	basic understanding	some good idea	no good idea
region(s)	I, II, III, IV	I, II, III	I, II	I	None

To visualize the assessment result, regions are colored based on the % of students who contributed, as follows:

% of contribution to the region	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
color of region	black	dark green	light green	dark blue	light blue	red	orange	pink	dark yellow	light yellow

A benchmark for the assessment was stated as follows: *at least 70% of the student will score 70% or more on the Post-Test assessment*. This benchmark set the expectations high. In providing the result of the assessment below, special attention was made to trace the changes of the proportion of students who scored 70% or higher.

Findings

Comparison Group

Pre-Test data was collected from 116 students, while Post-Test data in the Final Test was taken from 51 students. The size of the sample in the Post-Test data is reduced since, upon good performance, some students could choose to be waived from the Final Test, so the assessment results became somewhat distorted. The distortion is, however, compensated by the relatively large number of students who had participated un in both testing. FIGURE 5 indicates the Pre-Test and Post-Test score distributions, and Table 3 indicates the detailed Pre-Test and Post-Test data for the Comparison Group, respectively.
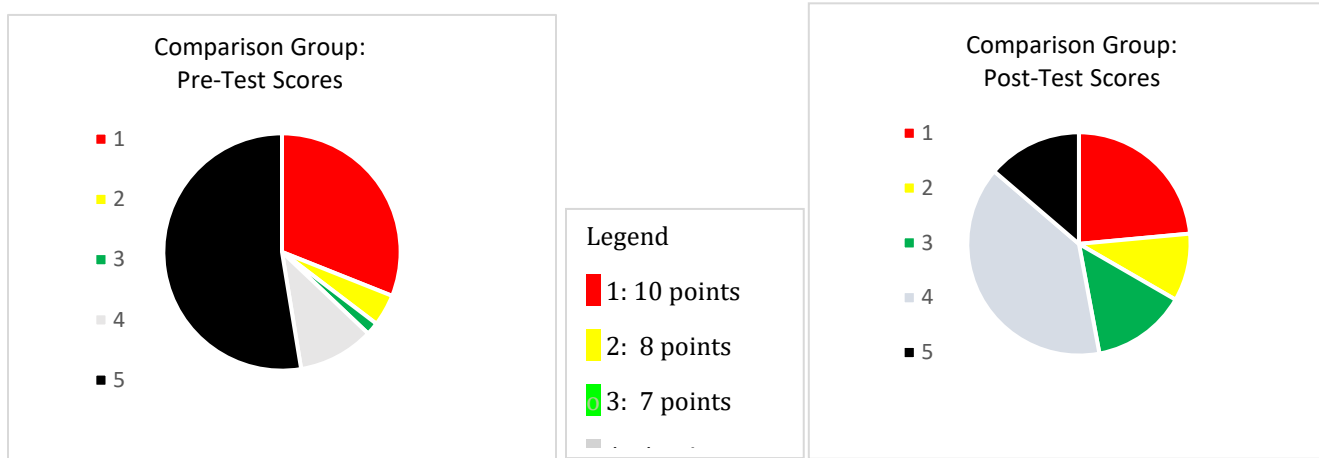

FIGURE 5. Pre-test and post-test score distributions

Table 3. Pre-Test and Post-Test Data for the Comparison Group

Comparison Group data	correct solution	good un-der-stand-ing	basic un-der-standing	some good idea	no good idea			
Pre-Test: take-in assessment	100	80	70	40	0	total	mean	stdev
students	36	5	2	12	61	116		
in %	31	4.3	1.7	10.3	52.6	100	39.8 %	21.6
result vs. the 70% benchmark	score at least 70 %			43			**37.1 %**	
	score less than 70 %			73			62.9 %	
Post-Test: in Final Test	100	80	70	40	0	total	mean %	stdev
students	12	5	7	20	7	51		
in %	23.5	9.8	13.7	39.2	13.7	100	56.7 %	11.9
result vs. the 70% benchmark	score at least 70 %			24			**47.1 %**	
	score less than 70 %			27			52.9 %	
increase of scores of at least 70 %	comparison to the Pre-Test: relative to the number of							
	all students		10%	previously successful students				27%

In the Pre-Test 37.1 % of students scored 70 % or better, see the red, yellow and green sectors in the pie chart, while in the Post-Test 47.1 % of students scored at least 70 %. This is a 10 % absolute increase as compared to the total number of students, and a 27 % relative increase of the number of student scoring 70 % or better.
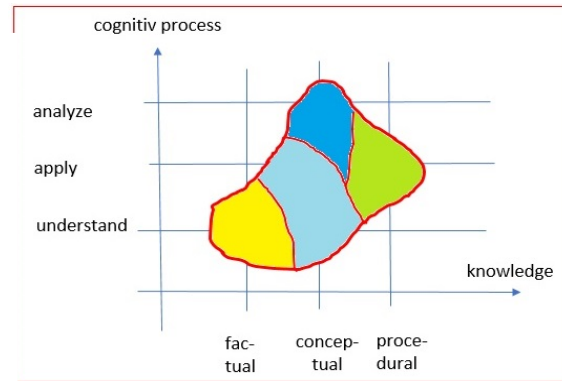
By visualizing the assessment result of the Comparison Group in Bloom's coordinate system, we obtained the

following charts showing the corresponding colors of the four regions:
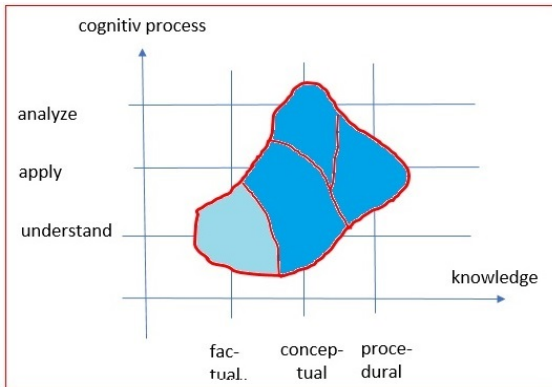
Visualization chart of the Pre-Test result

Visualization chart of the Post-Test result for the Comparison Group

Color coding of regions according to the proportions of student contribution

% of students contributing to the region	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
color of region										

To interpret this outcome, recall that in Bloom's coordinate system we move from concrete to more abstract knowledge from left to right along the horizontal axis, while we proceed from lower to higher order thinking skills bottom-up along the vertical axis. The color coding ensures that the proportion of students who contribute to any given region can be approximated: darker colors indicate lower proportion while lighter colors indicate higher proportion of contribution in the order as the colors are listed above.

We can observe that the colors are becoming darker when we move from left to right or bottom-up in the overall region representing the assessment in Bloom's coordinate system. This indicates that to more abstract knowledge and to higher order thinking skills a lower proportion of students would contribute.

Also, the colors of the regions representing the result of the Post-Test tend to be lighter than the same colors in the result of the Pre-Test. This natural expectation is, however, inverted in region IV, as light green is considered darker than dark blue. This kind of inversion in Pre-Test and Post-Test outcomes could happen occasionally, especially when the collected data becomes somewhat distorted, as we have indicated above.

Main Assessment Group

Pre-Test data was taken from 32 students. Post-Test data in a Regular Test at Round 1 came from 33 students, while Post-Test data in the Final Test at Round 2 was obtained from 25 students.

Pre-Test and Post-Test Score distributions are seen in FIGURE 6 and detailed Pre-Test and Post-Test data for the Main Assessment Group are seen in Table 4.

Assessment: Pre-Test Scores

Legend
1: 10 points
2: 8 points
3: 7 points

Assessment: Post-Test Scores 1

Assessement: Post-Test Scores 2
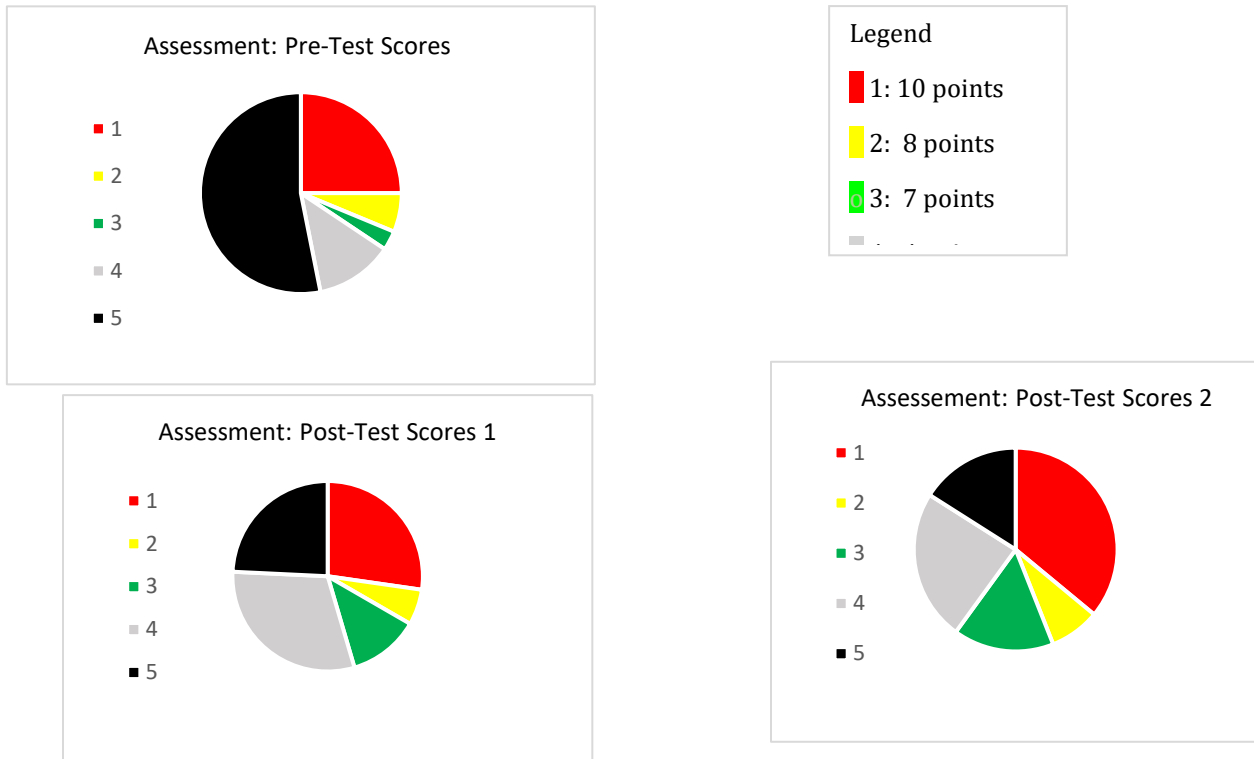
FIGURE 6. Pre-test and post-test score distributions

Table 4. Pre-Test and Post-Test data for the Main Assessment Group

Main Assessment Group data	correct solution	good under-stand-ing	basic un-der-standing	some good idea	no good idea			
Pre-Test: take-in assessment	100	80	70	40	0	total	mean	stdev
Students	8	2	1	4	17	32		6.5
in %	25	6.3	3.1	12.5	53.1	100	37.2 %	20.3
result vs. the 70%	score at least 70 %			11			**34.4 %**	
benchmark	score less than 70 %			21			65.6 %	
Post-Test 1: in Regular Test	100	80	70	40	0	total	mean	stdev
Students	9	2	4	10	8	33		
in %	27.3	6.1	12.1	30.3	24.2	100	52.7 %	10.4
result vs. the 70%	score at least 70 %			15			**45.5 %**	
benchmark	score less than 70 %			18			54.5 %	
increase of scores of at least 70 %	comparison to the Pre-Test: relative to the number of							
	all students	11.1%		previously successful students				32.3%
Post-Test 2: in Final Test	100	80	70	40	0	total	mean	stdev
Students	9	2	4	6	4	25		
in %	36	8	16	24	16	100	62.3 %	10.6
result vs. the 70%	score at least 70 %			15			**60 %**	
benchmark	score less than 70 %			10			40 %	
increase of scores of at least 70 %	comparison to the Pre-Test: relative to the number of							
	all students	25.6%		previously successful students				74.4%

In the Pre-Test, 34.4% of students scored 70% or better. In the Post-Test at Round 1, 45.5% of students scored 70% or better. This is a 11.1% absolute increase as compared to the total number of students, and a 32.3% relative increase of the number of student scoring 70% or better. This result was considered as intermediate toward a Round 2 Post-Test assessment with embedded question in the Final Test. In the Post-Test at Round 2, 60% of students scored 70% or better. In relation the Pre-Test data, this is a 25.6% absolute increase as compared to the total number of students, and a significant 74.4% relative increase of the number of student scoring 70% or better.
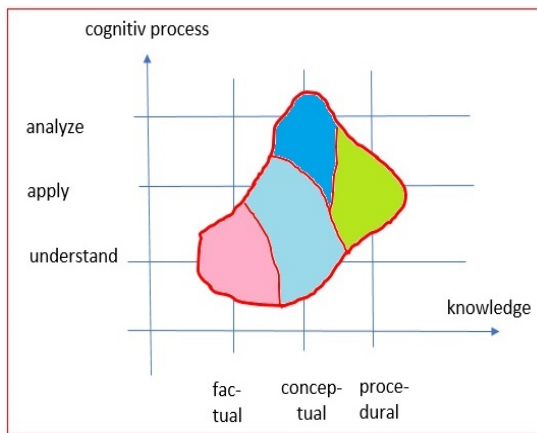
Again, we may visualize the assessment result of the Main Assessment Group in Bloom's coordinate system.
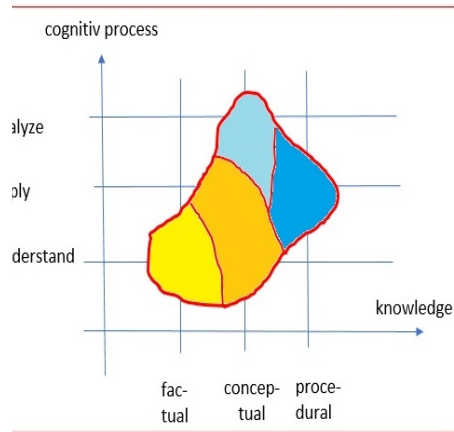

Visualization chart of the Pre-Test result
for the Main Assessment Group
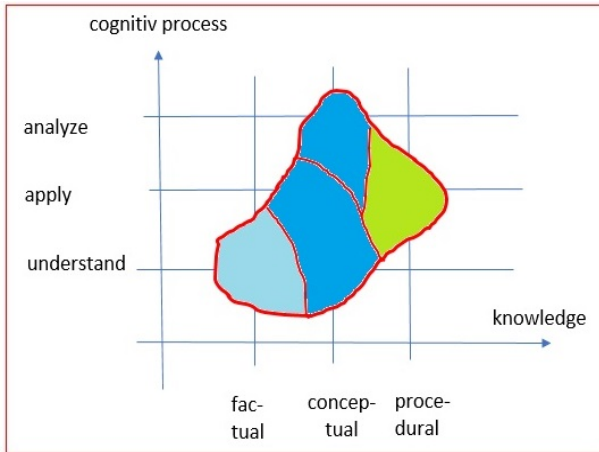
Color coding of regions according to the proportions of student contribution

%	Color	%	color
0-10		50-60	
10-20		60-70	
20-30		70-80	
30-40		80-90	
40-50		90-100	

Visualization chart of the Post-Test result at Round 1
for the Main Assessment Group

Visualization chart of the Post-Test result at Round 2
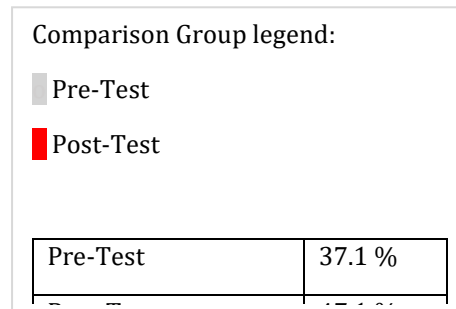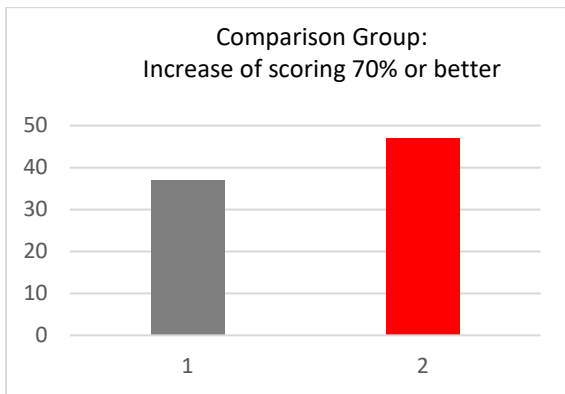
The Outcome of the Main Assessment

Group, as visualized in Bloom's coordinate system, shows again that the colors are becoming consistently darker when we move from left to right or bottom-up in the region representing the assessment. This is a confirmation that requiring more abstract knowledge and higher order thinking skills produces lower proportion of student contribution.
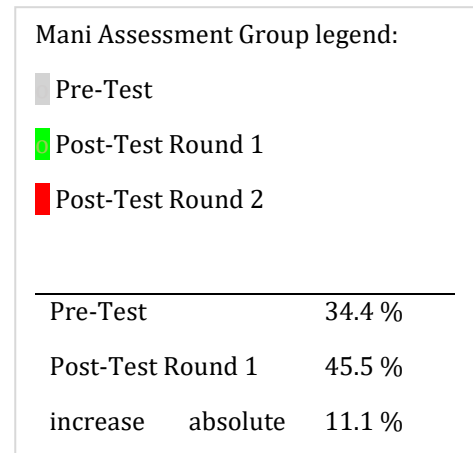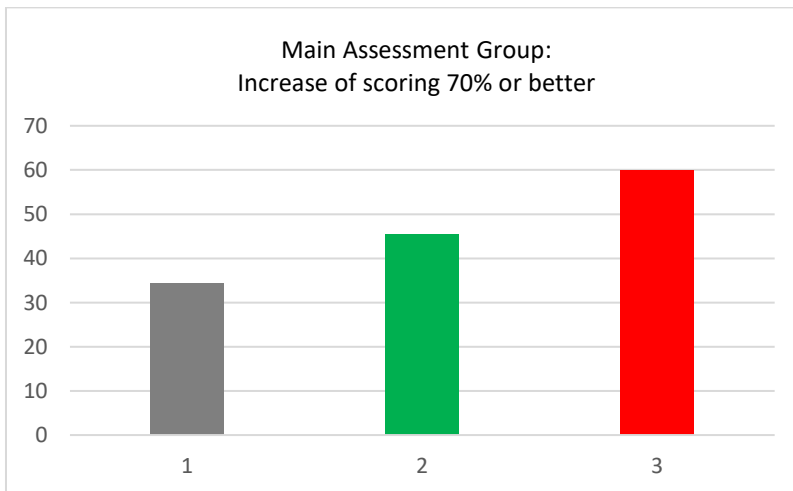
Comparing the visualization charts, a progress of acquiring the necessary skills can be detected from the Pre-Test to Round 1 and Round 2 of the Post-Test. Following upon this consistent progress in time, the colors of the regions in the result of the two Post-Tests are becoming significantly lighter than in the Pre-Test. At Round 2 of the Post-Test the lower left half of the region lightened up considerably, while only the upper right portion remained relatively dark, although lighter than in the Pre-Test and at Round 1 of the Post-Test. This can be interpreted as a detectable majority of students made progress in acquiring concrete knowledge and lower order thinking skills. In addition, abstract knowledge and higher order thinking skills measurably improved for most students.

Overall Result: The Benchmark Was Not Met!

Although the benchmark was not met, 60% of the student scored 70% or more on the Post-Test assessment. Let's recall that the outcome is somewhat distorted as some students with more advanced skills did not have to participate in Round 2 of the Post-Test assessment.

Comparison Group:
Increase of scoring 70% or better

Comparison Group legend:

Pre-Test

Post-Test

Pre-Test	37.1 %

In the Comparison Group, the number of students performing relatively well increased. This indicates an improvement in critical thinking and quantitative reasoning skills as measured by problem-solving.

Main Assessment Group:
Increase of scoring 70% or better

Mani Assessment Group legend:

Pre-Test

Post-Test Round 1

Post-Test Round 2

Pre-Test	34.4 %
Post-Test Round 1	45.5 %
increase absolute	11.1 %

In the Main Assessment Group, the number of students performing relatively well in the Post-Test as compared to the Pre-Test had significantly increased. This indicates improvement in critical thinking and quantitative reasoning skills as measured by problem-solving. In Bloom's coordinate system, we have detected progress in both the Knowledge and Cognitive Process Dimensions in recognizing, identifying knowledge, recalling and retrieving proper terminology, in clarifying and illustrating conceptual knowledge by categorizing, abstracting and generalizing information given in the English sentences of a simple work problem. In the subject-specific skills we have identified some difficulty with carrying out techniques and methods. These coordinates place the identified progress in the region

of both factual and conceptual knowledge and lower order thinking skills.

Conclusion

The outcome of the assessment indicates that students in this class acquired some critical thinking and quantitative reasoning skills for problem-solving. The instruction led to measurable result, even if the benchmark was not met. The reasons for not meeting the benchmark in problem-solving should be thoroughly examined and analyzed. A strategy should be developed to further increase critical thinking and quantitative reasoning skills for problem-solving so that the benchmark may be met in the future.

The shape of the assessment result in Bloom's coordinate system also suggests some areas of *instructional improvement.* Recall that darker colors indicate regions where only a lower proportion of students contributed in the assessment result. Lighter colors indicate regions where student contribution is higher. As seen in a chart (below), we may consider the directions in the visualization chart where colors should lighten up.
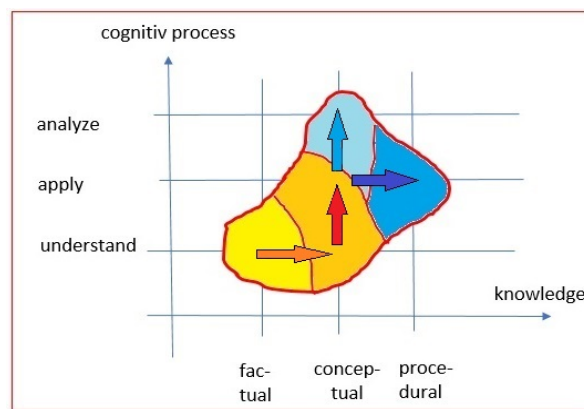
Based on the chart, instructional improvements are to be made:

- o from factual to conceptual knowledge in understanding: according to Bloom's Revised Taxonomy, a shift from knowledge of specific details and elements to principles and generalization is to be emphasized in this direction (see the orange arrow),
- o in cognitive processes from understanding to applying at the conceptual level: this can be achieved by moving from interpreting and classifying to executing and implementing (see the red arrow),
- o from applying to analyzing at the conceptual level: a further movement is needed here toward differentiating and organizing (see the light blue arrow), and
- o from conceptual to procedural knowledge in applications: a higher emphasis should be placed on subject-specific skills, techniques and methods (see the dark blue arrow).

In summary, we conclude that placing our problem-solving assessment in the framework of Bloom's Revised Taxonomy, a deeper insight into our educational goals, in terms of understanding students' performance in attaining learning outcomes in critical thinking and quantitative literacy, was gained. By analyzing the outcome in this framework, we have also obtained reasonable directions for instructional improvement. Overall, we have demonstrated that Bloom's Revised Taxonomy is convenient for designing and visualizing an assessment and interpreting its outcome in Bloom's hierarchy.

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Factors in Success among University Students

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Student success in higher education is traditionally defined in terms of desirable or expected learning outcomes, but the reality is much more complex. With these perspectives in mind, this paper discusses student success, in each of three main sections of the paper. Two sections review the literature to address specific matters: the first, on how to define and redefine "student success" in higher education. Students and administrators do not always agree on the definition of student success. The second section identifies complex and interrelated factors that influence student success. The third section summarizes student opinions about student success based on an opinion poll. In lieu of definitive answers, the current paper will serve to promote conversations addressing student success. And yet, even more important, for higher education institutions, is that now is the time to establish a valid new definition of student success, as derived from a whole-person perspective.

Keywords: academic success, competencies, attainment, engagement, learning activities, learning outcomes

Introduction

Virtually everyone agrees that student success in higher education is a simple formula of natural intelligence, hard work, and a quality learning environment. Nevertheless, the reality is much more complex and intertwined. Specifically, "Student success is more than a buzzword. It is a driving force behind policy and institutional change efforts underway in postsecondary education" (Higher Learning Commission [HLC], 2018, p. 1); in particular:

> The learners of today are diverse and engage with the postsecondary system in a fluid manner. Students today are not just going to college, but working, raising families, and engaging with their communities . . . . They also enroll at multiple institutions, engaging with the system, not a single institution. (p. 2)

The learners of today *are* "from poorer sociocultural and academic groups and groups of students with different capacities, motivations, and vocational projects" (Casanova, 2018, p. 408). It should be emphasized that the learners of today in higher education *are* much "more heterogeneous than ever before and possess a wide and diverse range of characteristics and abilities" (Danilowicz-Gösele et al., 2014, p. 2). "The traditional student no longer exists. To ensure that all students persist and graduate, be they first-generation, part-time, adult, or 'traditional,' schools must reimagine the care models, experiences, structures, and technologies they provide" (EAB, formerly known as the Education Advisory Board, 2019, p. 2). "First-generation students represent a crucial population in institutions of higher education. Often considered 'at-risk' in academic persistence and retention discussions, these students present both a challenge and an opportunity to postsecondary education" (Hand & Payne, 2008, p. 4).

It should be further emphasized that acquiring the 3Rs (**r**eading, **w**riting, and a**r**ithmetic that are the foundations of a skill) has no longer been enough since the late 1900s, and essential skills for success in today's world—especially college and career readiness, as well as global citizenship—include the following innovation skills (known as the 4Cs): **c**ritical thinking, **c**ommunication, **c**ollaboration, and **c**reativity (Hernandez, cited in Inoue-Smith, 2018).

This paper, consisting of three sections, provides an ample discussion on *student success*. Two sections of the paper review the literature. The first section is about (re)defining student success in higher education based on the thought that: "The way we currently measure student success is deeply rooted in traditional metrics, such as individual letter grades, cumulative grade point averages (GPAs), and graduation rates. . . the concept of higher education institutions offering a more holistic look at students' achievements does indeed make sense" (DePaul, 2018, ¶2–11).

The second section is about factors influencing *student success* in higher education based on the thought that: "Student success in postsecondary education has roots in students' lives far earlier than the postsecondary years, through the influences of families, peers, teachers, counselors, cultural factors, and K-12 school curricula and extra curricula" (Hearn, 2006, p. iii).

The third section is a summary of graduate students' opinions about *student success*. An opinion poll was conducted by the author of this paper based on the thought that: "Administrators tend to center student success around degree completion, while students often want much more than a degree from their college experience" (Karen Stout, cited in EAB, 2019, p.1). This paper reveals complex factors that impact student success, which is defined in different ways in different institutions depending on their core values.

(Re)Defining Student Success

"In the past, student success was not really top of mind for most higher education institutions. What mattered most was enrollment numbers, tenured professors, grants, and other metrics of success. . . .Things have changed considerably over time, as these are no longer the benchmarks of success" (HighPoint, n. d., ¶1): "The term 'student success' came to be as institutions began to focus more of their attention on the students rather than their infrastructure. In order to be considered successful, students would have to succeed as well" (¶2).

As noted by Cox (2018), the most fundamental definition of student success is "completing and receiving a degree. For decades, national completion rates have hovered around 20-30 percent in three years for an associate's degree and 50-60 percent in six years for undergraduate degrees" (¶1); and, "A classic student-success initiative begins by collecting data on dropouts and uses that as a proxy for reducing failure, rather than for scaling success" (¶4).

"Completion" is the exact word used considerably when people discuss student success (Nazerian, cited in HLC, 2018). And completion rates, in fact, are "easily measured outcomes for colleges. . . these statistics are strongly related to the institutional missions and resources, the demographics of the student body, and the lives and motivations of both the students and the faculty" (Stiles et al., cited in HLC, 2018, p. 1).

"How student success is defined is thus based on more tangible metrics, such as graduation rates, time-to-graduation, postsecondary degrees, and job placement. These are easy to measure, and federal and state funding is now predicated on these results" (HighPoint, n. d., ¶2). According to Aspen Institute (n. d.) focusing on completion is not enough because all higher education degrees are not created equal. Certainly, it is a valuable point of view.

Moreover, "Determining that what factors effect students' motivation to learn is an important issue. . . .The sources of motivation are generally categorized as being either intrinsic (from within the person) or extrinsic (external desires, values, wants, and goals)" (Tan, 2009, p. 157). Four classroom contextual factors that influence student academic motivation are the following: (i) the nature of the academic tasks and assignments; (ii) the reward and goal structures; (iii) the instructional methods; and (iv) the instructor's behavior (Pintrick, cited in Tan, 2009).

Now, What Does Academic Success *Really* Mean?

It must be understood that the meaning of academic success greatly depends who one asks. "Ambiguity associated with the definition of academic success is partially attributed to its inherently perspectival nature. Varying constituents view success, and thereby academic success, differently" (York, Gibson, & Rankin, 2015, p. 1); for instance, the faculty member who teaches courses "may argue academic success refers specifically to the acquisition of specific knowledge and skills demonstrated through completion of courses. The administrator may in turn argue academic success refers to ability for graduates to obtain and advance in occupations within, or related to, their degree fields" (p. 2). York et al.'s extensive literature review results reveal as follows:

> GPA tops the list as most often used measurement of academic success accounting at 54.8% making academic achievement the most commonly assessed aspect of academic success within the empiric pieces we reviewed. Studies utilizing measures of critical thinking and retention were the next most prevalent at 19.4%, and academic skills and engagement measures come in third at 16.1%. It is interesting to note that two of the three most utilized measures, GPA and retention, involve data that is the most readily available to institutions; therefore, their prevalence may be due convenience and accessibility over a narrow conception of aspects of academic success. (p. 8)

These review results imply the following: "A more flexible student success framework, with students at its center, would include measures of attainment of learning outcomes, personal satisfaction and goal/intent attainment, job placement and career advancement, civic and life skills, social and economic well-being, and commitment to lifelong learning" (Inside Higher Ed, cited in Fain, 2018, ¶3). It is increasingly considered that student success should include not only strong retention and degree completion rates, but also high-quality learning outcomes. And the following is certainly true: although academic success is "not the only road to success in the real world, much effort is made to encourage the progress of students in universities. It is also believed that good academic results will provide more career opportunities and job security" (Smithikrai et al., 2018, p. 1).

Addressing that *real* definitions of "student success" should combine graduation rates with other outcomes, Parnell (2018) argues: "If we are going to prepare students to be as knowledgeable, adaptable, resourceful, and self-aware as they will need to be in the years ahead, we have to modify our definition of student success" (¶3); in particular, successful students share *four* common qualities. Firstly, they know when and how to adapt to change their environment. Secondly, they understand their needs and the needs of others and know how to balance competing individual and community priorities. Thirdly, they know how to manage resources, both those for which they are individually responsible and those they share responsibility for with others. And fourthly, they realize their contributions to the world and are prepared to leverage their abilities to improve the conditions around them. Parnell believes that these four qualities will "add complexity to how we describe student success" (¶8).

The American Federation of Teachers of Higher Education, for instance, defined "student success" as the achievement of the student's own "educational goal" rather than degree attainment, recommending its members to handle this definition of student success in broader terms (Perger & Takács, 2016). On the subject of college achievement, based on three common indicators (i.e., enrollment in higher education, academic performance during higher education, and degree completion) of student success in the literature, Perna and Thomas (cited in Perger & Takács, 2016) consider "student success" as a longitudinal process involving the following four definite transitions: (i) *college readiness* measured by academic preparation and educational motivation; (ii) *college enrollment* measured by college access and college choice; (iii) *college achievement* measured by academic performance, transfer institution, and degree completion; and (iv) *post college attainment* measured by educational attainment, income, and enrollment in graduate school.

Student Success Factors

"Student engagement is a concept that is approximately three-quarters of a century old and refers to how engrossed or attentive students seem to be in their learning or how integrated they are with their classes, colleagues, and colleges" (Caruth, 2018, p. 17). Student "engagement" is a term typically used to discuss one of two concepts: (i) "students' psychological investment or willingness to invest time in educational behaviors" (Chapman, cited in York et al., 2015, p. 5) or (ii) "a more general reference to student involvement in educational activities"(Kuh et al., cited in York et al., 2015, p. 5)—and so, "Viewing student engagement as psychological desire or motivation to participate in learning could be conceptualized as an outcome" (p. 5).

"Some post enrolment factors that strongly influence success include: motivation; students' approach to studying; cultural expectations; psychological factors; student's academic literacy; students' time management skills; peer culture; the quality of teaching; students' belief in their own ability; and student support structures offered by the university" (Killen, et al., cited in Sibanda, et al., 2015, p. 106). Accordingly, "Despite, and perhaps because of its amorphous nature, the term 'academic success' is one of the most widely used constructs in educational research and assessment within higher education" (York et al, 2015, p.1).

"Academic success"—defined as meeting an institution's expectations or desired outcomes—is often used interchangeably with terms, such as "academic achievement" or "academic performance" (cumulative GPA and completion of educational benchmarks), education attainment (the highest degree of education an individual has completed), and student engagement (a psychological investment in learning). The following three terms are "frequently mentioned in the literature as being relevant to academic success: (i) previous academic achievement; (ii) self-efficacy; and (iii) preferred learning styles" (Burton & Dowling, 2010, p. 69).

"The probability of academic success and the reasons for dropping out of university are subject of continuously expanding research literature . . . studies provide a consistent picture of previous high school performance as the major prominent predictor of university success" (Danilowicz-Gösele et al., 2014, p. 2). Students who enter university with higher entry scores tend to finish higher education successfully (McKenzie & Schweitzer, cited in Burton & Dowling, 2010). Danilowicz-Gösele et al.'s study (N = 12,315) found that high school grades *are* strongly associated with college graduation probabilities, while variables measuring social origin or income power have only a smaller impact. The link between "high school performance" and "college performance" is shown to vary substantially across major programs. Educators argue that entry standards are, in effect, the most important determinants of the successful completion of university programs, even though some maintain that non-academic factors must be the determinants (Mapuranga, Musingafi, & Zebron, 2015).

Smithikrai et al.'s (2018) path analysis focused on factors influencing students' academic success (obtained from GPA, which is a common measure of academic performance used in higher education) using data from 802 undergraduate students. As predicted, independent variables (purpose in life, peer support, and satisfaction with teaching quality) are all related to the dependent variable (study engagement). *Engagement* (measured with the Utrecht Work Engagement Scale developed by Schaufeli & Bakker, cited in Smithikrai et al.) not only has direct relationships to *academic success*, but also it fully mediates the effects of *Purpose in life* (measured with a Life Test developed by Schulenberg et al., cited in Smithikrai et al.), *peer support* (measured using a scale developed by the authors), and *satisfaction with teaching quality* (measured with a scale developed by the authors) on *academic success*. In summary, undergraduate students with high levels of purpose in life, peer support, and satisfaction with their teachers, become highly engaged in their studies, which, in turn, significantly predicts higher GPA. However, questionnaire-based self-assessments are by and large subject to the social desirability bias, in which respondents give inaccurate—but socially desirable—responses: even though their anonymity is guaranteed.

Student engagement is reviewed as a critical aspect contributing to college success, but specific factors influencing student engagement in learning activities *are* still largely unknown (Xerri, Radford, & Shacklock, 2017). In this regard, based on the extensive literature review, Horton (2015) has identified twenty key factors influencing college success. The factors are divided into four categories. The first category, *perseverance*, includes: (1) lacks self-discipline; (2) procrastinates; (3) irresponsible; (4) afraid of failure; and (5) no sense of self-efficacy. The second category, *academic mindset*, includes: (6) financial constraints; (7) unmotivated; (8) aimless (no clear goals); (9) first generation college student; and (10) fixed mindset (accepts current performance level as permanent). The third category, *learning strategies*, includes: (11) teacher pleasers (constantly seeks direction from authority or teacher in order to please them); (12) unchallenged (bored); (13) memorizes instead of thinking; (14) doesn't transfer and generalize knowledge; (15) highly judgmental and negative of self; and (16) minimal metacognitive awareness (unaware of one's own thought process). The fourth category, *social skills*, includes: (17) non-team player; (18) insecure public speakers; (19) lacks a support system; and (20) lacks mentors and role models.

It is becoming more and more important for administrators and leaders in higher education institutions to understand the above-stated twenty key factors. These factors essentially provide a basis for educators to develop student learning skills to enable them to become proficient in addressing the factors and to achieve academic success. As Horton (2015) maintains, the following notion should be kept in mind: "Success in the 21st century requires a rigorous academic education, cutting-edge technical skills, and a foundation that supports continuous learning and growth for college, career, and life" (p. 83); and, indeed, "Learning involves continuously increasing one's capacity to process, connect, and create knowledge that supports skillful performances in every area of life" (p. 95).

Aydin et al. (2015) examined the relationship between student engagement and perceived English language proficiency. Their web-based questionnaire (N = 1,109) indicated as follows: student engagement with instructors, peers, academic tasks, and campus events were positively related to personal gains; and student engagement with peers, campus events, academic tasks, and perceived English proficiency were the significant predictors of GPA.

In the same way, Xerri et al. (2018) examined the influence of connectedness (relationships with peers and teachers), motivation to study (sense of purpose), and perception of workload upon student engagement in learning activities

(N = 209). As a result, their survey questionnaire indicated that three research variables (student-student relationships; teacher-student relationships; and students' sense of purpose for pursing a higher education degree) were all correlated to student engagement in leaning activities. That is, both "teacher-student relationships" and a "strong sense of purpose" were statistically significant to the perceptions of student workload.

Ewell and Wellman (2007) synthesized their findings from the National Postsecondary Education Cooperative Symposium on Student Success. The Symposium identified three key factors influencing student success. The first factor is that student success is heavily influenced by precollege backgrounds and experiences. The second factor is that what faculty do to create and deliver educational experiences, which is the single most potent component of what institutions do. The third factor is that systematic information about student outcomes and behaviors which is a valuable auxiliary. "Each of these factors has implications for how success should be measured and for strategies to change behavior to improve performance" (p. 2). Ewell and Wellman continue their discussion as follows:

> Student success is thus a generic label for a topic with many dimensions, ranging from student flow across the entire educational pipeline (high school graduation, college enrollment, retention, and degree completion), to the quality and content of learning and skills achieved as a result of going to college, to possible educational experiences (such as student engagement or satisfaction). Measures of success also have different units of analysis, depending on whether success is assessed for individual students, for groups of students defined in terms of different combinations of characteristics, or for institutions, and for each, those units of measurement can be aggregated to state and national level. (p. 2)

Student Opinions About Student Success

"The term, student voice, has been used in reference to various types of student input, ranging from personal expression in classroom assignments, to feedback to educators on instructional issues, to involvement in school governance and decision-making to participation on state-level boards of education" (Education Alliance, 2004, p. 3). Furthermore, "The student voice is often heard in relation to evaluations of teaching and learning however limited in a broader university context. It appears that even if a university values the student voice, additional support is needed to engage them as change agents" (Allen & Nichols, 2017, p. 124).

In terms of students' perceptions of academic success, based on the data of 130 undergraduate students in psychology courses, Rea's (1991) survey revealed a predominantly intrinsic orientation for students' highest ranked perceptions and an extrinsic orientation for their lowest ranked perceptions. Specific voices regarding the highest ranked perceptions were: "receive a grade that represents my best effort"; "learn something new which I was not familiar with before"; "try my best even if I don't get the best grade"; "better understand the subject matter"; "gain practical knowledge I can apply in everyday life"; and "find the subject interesting." The lowest ranked perceptions were: "receive an A grade"; "find the instructor interesting"; "feel comfortable with people in the class"; "satisfy my parents with my performance"; "have interactions with others in the class"; "favorably impress my teacher with my performance"; and "favorably impress my friends with my performance."

What Does Student Success Mean to University Students?

Two groups of in-service teachers participated in an opinion poll conducted by the author of this paper in 2019. In-service teachers enrolled in a professional development course that the author taught, comprised the first group (n = 21): they defined student success based on their perspectives as K-12 classroom teachers. In-service teachers enrolled in a course in a master's degree program that the author taught, comprised the second group (n = 22): they defined student success based on their perspectives as graduate students (not based on their roles as teachers). Each participant defined student success in her or his own words.

Below are the representative responses provided by the first group. They defined student success as:

o Having gained the ability to adjust learning environments to ensure constant improvements

- o Having gained the ability to take a genuine inventory of oneself: honoring one's strengths; and simultaneously acknowledging one's limitations, and identifying areas for growth
- o Having gained the ability to take responsibilities for one's actions to make changes if necessary
- o Having strengthened their abilities to think independently, to explain their thinking, and to solve problems: using skills and knowledge gained in coursework, as well as prior knowledge
- o Having strengthened their abilities to understand and verbalize ways in which they need to improve, rather than just celebrating their accomplishments; so that they can improve constantly
- o Having gained the ability to apply what they have learned to the real-world situations
- o Having gained the ability to maintain test scores along with fostering good social skills
- o Having gained skills in working cooperatively with others in school, at home, and in communities
- o Accepting guidance and support, but increasingly taking responsibility for their own decisions and actions; and promoting good relationships with peers, family, and the world around them

By the same token, below are the representative responses provided by the second group. They defined student success as:

- o Completing courses of study with the highest grades, acquiring advanced knowledge
- o Being able to accomplish the goals established at the beginning of the degree program
- o Achieving outstanding results in a master's degree program, and being prepared for the transition to a doctoral program
- o Achieving excellent grades in required courses that were taken from an established institution
- o Receiving good grades, the ability to apply what is learned in the classroom to real-world situations
- o Completing a degree with excellent grades, in support of continuing goals and achievements in life
- o Satisfying the expectations of the instructor or institution in general
- o Accomplishing one's mission in education. It starts with gaining the requisite knowledge and skills and being able to apply them.
- o Achieving targeted levels of performance in all courses: from assignments and projects, to tests and quizzes

It perhaps needs to be emphasized that a sample composed of undergraduate students would have provided the most representative look at how university students themselves view student success. Based on the above representative opinions, teachers' (the first group) and students' (the second group) perspectives clearly differ: for example, the former perceiving student success as gaining the ability to take responsibility for one's performance, but the latter perceiving student success as finishing their courses with high grades.

When graduate students are asked to apply their perspectives as K-12 classroom teachers, they define students' success in terms of strengthening "their abilities to think independently." This definition aligns with Parnell's (2018) proposal that successful students understand their own needs and take responsibility for their own achievements. Alternatively, when graduate students answer based on their role as students in a course, they define student success as "completing a degree with excellent grade," or "achieving outstanding results" in the degree program. This echoes the most fundamental and general definition of student success—completing and receiving a degree with a higher GPA—as stated by Cox (2018). These findings are, indeed, intriguing.

Conclusion

Scholars addressing student success frequently make use of data on retention (e.g., advancing from freshman to sophomore status) and on percentages of students who persist until receiving their degrees. And the literature addresses institutional persistence: students remaining in the universities where they began their studies.

As also discussed in this paper, students in higher education now "come from various backgrounds, and they were provided the same educational services. But, in reality, some students perform much better than others academically. "Academic success," after all, "has a great influence on the student's self-esteem, motivation, and perseverance in higher education" (Jauanthi et al., 2014, p. 752). In this regard, Horton (2015) had argued as follows:

Increasing numbers of at-risk students are going to college with multiple risk factors, including being first-generation college students. If the federal goal of having the world's highest rate of college completion by 2020 is to be achieved, colleges must utilize educational strategies that will assist students in achieving their performance goals. While there are a variety of programs to support students, a holistic approach is needed where a foundation is established that enables students to learn how to learn, to transfer knowledge, and to think critically. (p. 95)

If student success is defined only "in the context of completion metrics, we risk adopting a shortsighted view of a valuable college experience. Postsecondary education is an avenue for students to become more engaged citizens, contributors to the public good, and advocates for themselves and others" (Parnell, 2018, ¶10). *Three* questions, below, are critical to promoting success among university students (Cuseo, n. d.). Optimizing student success in higher education requires a plan for answering each of these series of questions:

The *first* question is: How should student success in higher education be defined or described?
The *second* question is: What educational processes in higher education contribute to, or increase, the likelihood of student success?
The *third* question is: How can student success in higher education be measured or assessed; that is, what constitutes evidence that student success has been realized?

In the end, how to describe "student success" . . . that is the question. Higher education professionals must work together to establish visions of student success that are grounded in reality as well as are based on the students' perspective; and then determine what outcomes constitute measures of student success, so defined. Such definitions will transcend test scores, deriving instead from a whole-person perspective. This will be a long journey, but now is the time to take a step forward. This is because "It is no longer beyond the capacity of a college or university to articulate expectations for learning, to document student progress toward these expectations, and to use the resulting evidence to improve student success" (NILOA, 2016, p. 7).

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Section Two

Essays

Is Guåhan Going Green? Applying Four Theories of Environmental Philosophy

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> If you think you can solve a serious environmental question like global warming without actually confronting the question of by whom and how the foundational value structure of our society is being determined, then you are kidding yourself. (David Harvey, 2010, p. 166)

In Roman Catholic and most Christian teachings, it is said that people sin or commit moral transgressions in thought, word and deed. In the Buddhists and Hindu teaching, it is said that people generate both good and bad *karma* in thought, word and deed. Note that the root meaning of *karma* means "to take action." For example, think about stealing and how a person commits the bad *karma* or sin of stealing, talk or think about a plan to steal and you commit the sin or bad *karma* of stealing; perform the act of stealing something from someone and you commit the sin or bad karma of stealing. Usually these works together. First someone thinks about doing something wrong, then s/he talks about it, and finally they end up doing it. Or it happens the other way around. First, they do something, then talk and think about it. Then, they do it again. The cycle of both sin and *karma* continue. Thinking good thoughts, talking good words and performing good deeds also helps people in a positive way to do good things or generate positive results.

In part your challenge as a person concerned about the environment is to overcome the ill effects of bad thoughts, words and deeds against the environment, and to generate good thoughts, words and deeds regarding the environment on island and across the planet. Act locally; think globally, your good actions will spread. You will become a hero who saves the world, like my hero Greta Thunberg, the teenager fighting against climate change.

Can the four dominant approaches to environmental philosophy help inform the theoretical and practical aspects of the various Agreen@movements on Guåhan, especially the UOG Green Interns? How do the dominant theories frame our understanding of human responsibility in regard to the natural environment and fellow animals? After briefly reviewing Ecofeminist, Deep Ecology, Sentientist, and Anthropocentric approaches, the author argues that each theory offers important ideas and practices that can influence Guåhan=s environmental initiatives and the UOG Green Interns in particular. Ecofeminist teach us that our practices that degrade the environment call for environmental liberation which is intimately tied to gender liberation and women's liberation. Deep Ecology asks us to reexamine the school curriculum on all levels K-18-20, and the embedded cultural beliefs and practices that perpetuate ecological degradation. The Sentient approach argues that humans have a moral responsibility to protect animals from unnecessary pain, and ultimately to protect all living creatures. The Anthropocentric approach argues that economic incentives are needed to motivate people to stop exploiting the environment and to protect it. Each theory offers an alternative framework that open various avenues for implementing environmental movements on

Guåhan. I would argue that a syncretic or eclectic approach is best. That we should combine the four theories to get the best out of each approach, leaving the worst aspects behind, and thereby improve both our understanding of and our practice of environmental ethics in theory and in practice. In conclusion, the author proposes that so far Guåhan's environmental initiatives are relatively superficial, and far more is needed to reduce pollution and our "carbon footprint" on Guåhan. Though things have improved greatly since 2009, far more still needs to be done in my humble opinion.

I must point out that the first step of environmental activism is EDUCATION (Callicott, 1995, pp. 19–36). Learning about environmental philosophy, environmental ethics and ecology are some of the most primary activities that people must engage in before they set out to influence policies and practices.

Do we need to re-think the meaning and role of philosophy? The major mainstream philosophies, especially teachings from many of the Renaissance and Enlightenment thinkers focused on the moral and intellectual development of rational-moral human beings in isolation from nature, and the environmental context. Traditional Platonic and Cartesian dualism isolates the true nature of the mind or soul as being distinct from the body; the ideal Platonic forms, or even the Aristotelian universals are distinct from the particular object; even holistic or monistic philosophies which deny the "reality" of being isolated, still focus on the abstraction in the mind's eye. For example, in Aristotle's philosophy where the universal is fused with the particular object in reality, the mind is supposed to focus on the eternal, universal in developing scientific theory.

Is philosophy standing on its head? Do we need to turn it over and stand it upright? Philosophy has been typified as an abstract approach to pure theory or as Aristotle phrased it "thought thinking thought." I propose that we stand philosophy upright as "the environment thinking the environment." Humans are part and parcel of the natural environment. By our own label we, humans, are "of the earth (*humus*)." As such the highest forms of thought and theory are about the environment, nature, and our inseparable relationship with it. There is a web-of-life that both defines humans as part and parcel of nature and defines nature as part and parcel of human life. Humans are what we are by virtue of our interaction with the environment, and the environment is what it is by virtue of its interaction with humans. This claim is most evident in regard to the landscape and a culture's interaction with and creation of the landscape.

First, I will outline *four* contemporary approaches to environmental ethics. Then I will offer some critique of the environmental practices on Guåhan.

Anthropocentric Approaches

The Anthropocentric theories propose that only humans have moral standing (Baxter, 1997, pp. 481–485). Most of these theories assume that humans are self-interested. People only want to do something that will benefit them. This is one approach to environmental ethics. The anthropocentric approach proposes that our obligations to the environment are determined solely by human

interests. It is like saying: "Look buddy protect the environment because it will benefit you; clean air and clean water will improve the quality of your life." In fact, human life and welfare do depend on such necessities as breathable air, drinkable water, and eatable food. We should also acknowledge the aesthetic effects of nature=s beauty as a source of restoring and invigorating the human spirit. So, we should protect the environment because it will improve or maintain the quality of human life. In the absence of overriding moral considerations, pollution is morally unacceptable precisely because it is damaging to the public welfare. Another way to think about this approach is that it is a basic human right to have access to a livable environment. So, there is a *prima facie* duty NOT to pollute. BUT the anthropocentric approach usually entails a cost benefit analysis in which all things considered people must weigh the cost benefits (usually economic) that accompany industrial pollution; usually this approach will allow for some pollution because it will be cost effective, that is, a profit needs to be made to maintain human economic benefits. So, we need to establish "acceptable" or "optimal" levels of pollution that will help us fulfill other economic self-interests. Some advocates of this view will insist that a wide range of human interests, not just economic benefits, must be considered. Values such as the quality of life, the aesthetic value of nature, people's spiritual renewal in nature, and so on must enter the cost benefit analysis. Some insist that the interests of future generations must also be considered. Because human well-being is so intimately intertwined with the well-being of the environment, we must oppose and prevent environmental degradation. Otherwise, sooner or later, human life will be severely compromised.

Problems: This view limits value to the human realm; it does not consider the value of other creatures, eco-systems or the whole environment. It also creates a speciesism, i.e. and irrational belief that one species should dominate the others. It may allow pollution to get out of control with the optimal pollution idea. It allows for an increase in pollution levels to satisfy profit motives.

Sentientist Approaches

The Sentientist theories propose that fellow animals have or should have moral standing. A more restricted Sentientist theory limits the scope to only mammals or higher mammalsBthose that care for their offspring for many years such as all the apes, elephants, whales, dolphins and the like. The sentient approach proposes that the interests of sentient beings (i.e., creatures that experience pain) should morally determine our obligations to the environment (Rollin, 1997, pp. 492–498). All sentient beings, not merely humans, have inherent or intrinsic value, not merely instrumental value. Some things are valuable as a *means* to a higher *end, or goal*—they have **instrumental** value. Other things are considered valuable in and of themselves; they are the *ends* or *goals*—they have **inherent** or **intrinsic** value. For the Sentientist, animals that experience pain have inherent value, and their interests matter to them. So, we must protect their interests in dealing with the environment. Animal interests must be considered equal to human interests in determining our environmental obligations. Like some anthropocentric thinkers, the Sentientist will also argue that we should protect non-sentient creatures or parts of the environment, e.g., mountains, rivers, and so on because of their aesthetic value for humans (and maybe other higher mammals). Albert Schweitzer's "reverence for life" is one of the earliest proposals of this view in the West. Hinduism, Buddhism, Jainism respectively proposed a similar view over two thousand years ago in India as did Daoism in ancient China.

Problems: This view limits value to creatures that experience pain. It may not go deep enough by not allowing for inherent value in the forces of nature or all of nature. It is difficult to judge internal states such as "pain" in humans much less other animals. Although Sentientism avoids speciesism, it creates a new kind of bias "Sentientism"—prejudice for sentient creatures.

Some questions arise: Does not "life" in general, just being alive, (not necessarily capable of experiencing pain, but just alive) have some intrinsic value? The FACT is that the eco-system operates by biodiversity. So, should we not also maintain a VALUE for biodiversity? Currently people understand that rights apply to individuals—the concept of "human rights" does not bestow rights on the human species but to each-and-every human individual. Does it make sense to argue for the basic right to life of whole species, or whole habitats, or eco-systems, or the whole environment? OR if there is no basic right to life for other animals, or for these species, or whole systems, then can we argue that humans have a duty to protect individual creatures, and whole species, habitats, eco-systems, or the whole environment?

Biocentric, Ecocentric or Deep Ecology Approaches

The third approach goes by various names biocentric, Ecocentric or deep ecology (Devall & Sessions, 1997, p. 499). These theories propose that the land has moral standing. Sometimes it is called the land ethic. This is the most radical of approaches, proposing that we need to rethink the meaning of philosophy itself. The anthropocentric approach is narrow minded and only self-interested in individual humans. The sentient approach is limited to protecting only creatures that experience pain. But our self-interest and the life interests of other creatures cannot survive unless there is an inorganic basis for life--the land, the air, the water, and so on. These are the basis of life and our human life. Don't these "things" have moral value? Most agree that natural resources have instrumental value. The Ecocentric approach wants to establish that natural resources or whole ecosystems have inherent, intrinsic value. We ascribe aesthetic values to nature. We speak of nature as having an aesthetic value—it looks good; or has beauty initself. So maybe people must begin to acknowledge that nature has objective moral value intrinsic to it, built into it.

Aldo Leopold's (1997) "The Land Ethic" was the first revolutionary proposal along these lines. He says:

> The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively the land. ... In short, a land ethics changes the role of *Homo sapiens* from conqueror of the landcommunity to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such. ... A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise. (p. 478)

Biotic means "relating to life." This view advocates that all life has some inherent moral value. The Ecocentric perspective takes it a step further and acknowledging that there is no life outside of an ecosystem, then the moral value must extend to the whole system including both living and non-

living elements of the environment. Arne Naess coined the term "deep ecology" proposing that the anthropocentric and sentient approaches are only shallow ecologies; whereas his approach is to re-think our environmental obligations on a deeper level (see Devall & Sessions, 1997, p. 499). He borrows from Asian philosophy, especially Hinduism, and proposes that our true "self" is unitedas-one with the whole of nature such that to harm nature is to harm oneself. Arne Naess and George Sessions write:

> The well-being and flourishing of human and non-human Life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.... Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.... Humans have no right to reduce this richness and diversity except to satisfy *vital* needs (Mappes & Zembaty, 1997, p. 479).

Problems: But hey now isn't this a very confused view; is not the Ecocentric approach just plain wrong in proposing that inorganic, nonliving "things" have inherent moral value? Instead of being radical by rethinking the character of moral value shouldn't we just be radical in restructuring our economic, social and political systems and protect the environment and our lives? We do not have to reshape the logical structure of moral obligations to change the way we exploit the environment and our fellow creatures. We only need to control ourselves.

The Approaches of Feminism and Ecofeminism

Let me begin with an article by Karen J. Warren (1997) entitled "The Power and the Promise of Ecological Feminism" (also in Pojman, 1998, pp. 173–182). By way of introduction let me make three points. First, it should be noted that there is no one position that represents or defines feminist philosophy. Second, some feminists (Sarah Hoagland, *Lesbian Ethics: Toward New Ethics*, 1988) setup a list of general contrasts between traditional Western (male) philosophy vs. Feminism. Traditional philosophy focuses on the: universal, absolutes, rules, theory, duty ethics, selfinterests, individualism. Feminists focus on particulars, context, out-comes, practice, and care ethic, self-and-otherinterests, dyadic relationships. Third, I give a brief summary of Warren's argument. Her thesis is: "I argue that the promise and power of ecological feminism is that it provides a distinctive framework both for reconceiving feminism and for developing an environmental ethics which takes seriously connections between the domination of women and the domination of nature."

Warren discusses conceptual frameworks and shows how some frameworks are "oppressive" by maintaining a "relationship of domination and subordination; when the oppressive framework is patriarchal, it is used to dominate women." She outlines three features of oppressive conceptual frameworks: (1) value-hierarchical thinking, high values vs. low values; (2) value dualism of disjunctive pairs (e.g., male, mind, reason vs. female, body, emotion); and (3) a logic of domination, i.e., a form of argumentation justifying subordination. She outlines the argument of "naturism" that because humans are morally superior to plants and rocks (we might add animals too), therefore, humans are morally justified in subordinating plants, rocks (and animals). Then she outlines the sexist argument: because men are superior to women in mental reasoning, therefore, men are justified in

subordinating women. Of course, ecofeminists want to abolish the above arguments and all oppressive conceptual frameworks. Warren points out that there are no "monolithic experiences", that feminism is "... a 'solidarity movement' based on shared beliefs and interests rather than 'unity in sameness'...". The notion of "unity" is tied to domination.

Warren argues that ecofeminism re-conceives feminism: male logic of domination has linked the subordination of women and nature, and sexism and naturism are both "socially construed." So, feminists must oppose both sexism and naturism (Warren, 1997, pp. 516–520).

Warren outlines eight traits of feminism and then she links those traits to ecofeminism: (1) ecofeminism is antinaturism; (2) it too is a contextualism; (3) it is pluralistic; (4) it advocates theory in process; (5) it is inclusivist; (6) as a social ecology it is anti-objectivity; (7) ecofeminism values care, friendship and trust; and (8) it too reconceives the human in relationship with the environment (Warren, 1997, 519–524). [I add that the nature-human relationship is co-defining and co-terminating; both are dynamically changing in their mutual dyadic interaction.] So "[a] responsible environmental ethic also *must* embrace feminism. First, there is the historical reality of the "feminization of nature and the naturalization of women." Second, sexism and naturism are linked in the Western logic of domination. Third, "feminism" shows *how* naturism is linked to patriarchy. Thus, "[a] reconceiving and re-visioning of both feminism and environmental ethics, is, I think, the power and promise of ecofeminism" (Pojman, 1998, p. 182).

Problems: Warren does not document "sexism;" she claims that sexism is related to naturism but did not prove that point. The links between sexism and naturism do not appear to be as strong in other cultures with different views of nature and women. Sexism or the lack of it takes on different forms in different cultures, but exploitation of the environment seems to be a constant.

Asian philosophies are more rooted in nature and generally show more concern for the environment than EuroAmerican traditions. Mahayana (northern) Buddhism is a form of Sentientism with its concern to liberate all sentient beings. Theravada (southern) Buddhism teaches the interdependency of all things; non-violence and non-interference with other humans and life forms, and the monks live closely with nature. Daoism teaches people to be one with the *dao* or way of nature. Daoism awakening entails, in part, being liberated from the limitations and trappings of human thought and society. Daoists seek harmony with the forces of nature. Many of its teachings influence Feng Shui—the art of placement, and various forms of geomancy designed to promote safe living conditions.

Summary and Conclusion

I think it is important that modern people acknowledge the traditional cultural ecological practices to become selfaware of both positive and negative values, assumptions and practices that underlie their present values, assumptions and practices. Based on my research as far as I can tell the indigenous environmental philosophy of the CHamorus and most other cultures of Micronesia and the Pacific were based on a type of hybrid of the anthropocentric and land ethic. The land itself is valued

as the remnant body of a primal ancestor, as is seen in the CHamoru story of Fu'una and Puntan, and the Balauan (Palauan) story that the islands of Balau (Palau) are the remnants of a giant ancestor or the islands were created by an ancestor either fished up out of the ocean or like Pohnpei the "stone altar" build by the ancestors. I have argued elsewhere that most of the peoples of Micronesia lived in harmony with their environment until it was to their advantage to exploit it in an anthropocentric mode (Sellmann, 2002). Indigenous practices of living on the ecological edges, the dynamic environments of the reef and the mountain valleys, provided fertile places for agroforestry and fish weirs for sustainable agriculture and fishing practices.

On Guåhan today, the green movement is the latest fad. It needs to be more than a fad though. The stores sell Tshirts with green slogans on them. The TV channels are running commercials reporting beach clean-ups and the three R's—Reduce, Reuse, Recycle. Then, in 2009, the UOG Green Movement took-off; while businesses began to take responsibility for the environment and some LEDS buildings, like the Coast 360 Credit Union building, were constructed. In 2012 Payless Market began the "zero campaign" to reduce the amount of plastic waste going into the dump. In 2020, plastic bags and plastic straws will be outlawed on Guåhan. Is this enough? But people are still saying things like "we are going green so let's not print the flyer; let's post it on the internet." Did you know that trees used to make paper and paper itself are renewal resources? The factories that make paper use recycled paper and the trees that are grown for paper are re-planted again for making future paper. Did you know that computers contain dangerous heavy metals like mercury? The plastic and the dangerous heavy metals in computers are harmful to the environment, living creatures, including humans. Computers also use fossil fuel for the electricity that makes them run. We all need to be aware of what is really a green environmental protection and what is merely a fad.

After taking the first step of education for environmental protection and the hazards of modern products, the 3 R's are a necessary second step. However, I propose that the 3 R's do not and will not sufficiently reduce pollution or our production of harmful carbon emissions. Why not? Because items that are reused and recycled still end up in the landfill. The 3 R's give people the impression that they are doing something important, and they are relatively easy to implement. So, people are drawn to them, but in fact they provide a false security. To make a lasting and significant reduction in pollution and carbon emissions, we need to engage in more radical (radical means to get to the [organic] root of the problem) and systematic practices. For example, factories could stop producing new plastic and we could only use recycled plastic, eventually stop using plastic all together. Would you buy food products or even laundry detergent that came in plastic containers made from recycled plastic (aka garbage)? Are you aware that microplastic has entered the food chain; that fish eat plastic particles in the oceans and lakes; that there is a huge mass of plastic the size of Rhode Island floating in the Pacific Ocean? Microplastics are also in the water table and your drinking water. When plastic breaks down it just gets smaller and smaller; when glass breaks down it returns to its natural state of silica. Inorganic arsenic occurs naturally. Are you aware that inorganic arsenic is increasing in our food due to the use of fertilizers and pesticides? Brown rice has higher concentrations of arsenic than Jasmin or Basmati rice.

It is very nice for individuals to reduce their use of wasteful or polluting products. It would be far better if the corporate producers of such products reduced their production and eventually stop

producing them all together. For example, consider the amount of useless and wasteful packaging that our products come in. Many products are double packaged. The product is in a bag and the bag is in a box, breakfast cereal for example. The wasteful packaging gives consumers the impression that they are buying more. In fact, everyone sees that the box is half-full, and the bag is half-empty. Products received in the mail have even more wasteful packaging. A book came in the mail the other day; it was in a box; the box was full of Styrofoam and the book was wrapped in plastic. See the Appendix for a few webpages about microplastic and arsenic.

What can you do?

Make a larger commitment and investment in going green. For example, buy a hybrid car or take your home off the electric grid by going solar. These would make a very significant contribution to lowering your carbon footprint. BUT notice that the hybrid car is still using fossil fuel that is burnt at the power-plant and its parts are full of plastic; and the solar energy parts are made of heavy plastic! In the meantime, you can replace your light bulbs with the new florescent bulbs. You can carpool or ride a bike—watch out Guåhan's drivers are not bike friendly! You can buy lowrolling resistance tires, get frequent tune-ups and maintain correct tire air-pressure, reduce your driving speed, avoid sudden acceleration and stops; turn your AC unit off or raise the temperature, weather-strip/caulk your house, paint your roof white, reuse your gray water, wash your closes in cold or warm water and use less detergent, turn off your hot-water heater for part of the day, install an on-demand water heater; install a more energy efficient refrigerator/freezer. You can reduce animal pain and farm pollution by not eating meat and fish or at least reduce your consumption, and thereby stop or reduce "indirectly" killing animals, by becoming a vegetarian. You will lose weight and feel better too. Green is the color of medicine. The Green movement should also entail better health habits, especially with the increasing levels of pesticides, arsenic and other toxin poisons in the food.

The recent, 2019, Trump administration's attack on environmental protections by eliminating EPA standards is a clear and present danger to human life and the environment. For moral reasons to protect human life and the environment, the federal government, especially the military, the Government of Guåhan and the businesses of Guåhan must either "join" or be forced into the green movement. The main job and purpose of the military should now be directed to environmental protection and combating climate change. "Coping with global warming is the greatest challenge we face as a species, mainly because it's what the United States military calls a 'threat multiplier'." (Parkes, Forthcoming, p. 21). Climate change is a major and dangerous threat to national security. The military should also direct its attention to cleaning up nuclear waste, even in other countries. The federal government and the military on Guåhan must make a greater concerted effort to clean up old dump sights, remnant agent Orange contamination, and to control current waste, especially nuclear waste, such as the nuclear submarine that was leaking radiation that harbored in Guåhan several years ago. Radiation leaks must not be allowed to occur. Period.

The Government of Guåhan has not been a green player. The long standing, more than 25-year, debacle over **not** closing the Ordot landfill, that became an air-fill, is strong evidence that various government agencies on various levels are not committed to protecting the land, water, and air that we all need to survive. Guåhan's out of date electric-power generation plants are allowed to burn a

lower grade of fuel that creates more pollution serve as further evidence that Gov Guåhan is not a green player. The unnecessary waste of many Government offices and agencies is more evidence. Areas that were designated as residential neighborhoods decades ago had water pipes laid out on the ground, but they were never installed. The broken infrastructure, especially the sewer system and its pollution are further evidence of the government's neglect. The lack of EPA controls on septic tanks, cesspools and outhouses are further evidence of the lack of controls, and that waste is leaking into the water table, where your drinking water comes from.

Is Guåhan green or brown? In the mid-1990s graduate students at the Marine Lab found e-coli bacteria all over the island: on the beach at Tumon to a depth of 2 feet deep into the sand; they even found it in pandanus (CH: kaffo'; sci: *Pandanus fragrans*) trees deep in the jungle far from homes. More recently Laurie Raymundo has found the bacterium of mammalian digestive tracts, called enterococcus, that is related to e-coli, at higher than EPA acceptable levels in the rivers and coastal areas of Southern Guåhan (Raymundo, 2018, pp. 53–54). Many local businesses are not going green. When some of the local air conditioning companies were able to buy illegal Freon, they bought and used it! A local store owner imported pesticides that are not EPA approved. All of the hotels with swimming pools use chlorine and that chlorine ends-up in the ocean, killing sea life. The construction boom on Guåhan is causing soil erosion, which ends up on the reef and kills the coral. Sadly, the list goes on and on.

Guåhan's political scholars and activists are already borrowing the correlative idea from Ecofeminism and Asian philosophies that human liberation is tied to environmental liberation, and they are arguing that our political liberation is tied to Guåhan's environmental liberation and vice versa. The people and the land are mutually interdependent such that their mutual liberation is connected and codependent (Kuper, 2019, pp. 199–236).

So, as we teach ourselves and our children the 3 R's, we also need to enforce present laws that protect the environment. We must resist the attempts to undermine the standards of the EPA. We should develop new and more stringent laws and practices that will continue to protect the environment and human life. Most importantly we need to change the way we think, talk and behave toward the environment.

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Appendix

A few web pages about microplastic and arsenic in our food, and the need for ethical decision making in the use of technology. These are just a few references. You can google these key words and find many more pages for your own research and education.

Microplastics:

https://www.bbc.com/news/world-us-canada-49845940/https://edition.cnn.com/videos/us/2016/11/30/microplastic-animation-explainer-midway-plastic-island-orig-io.

cnn/

Arsenic in Rice:

https://www.fda.gov/files/food/published/Arsenic-in-Rice-and-Rice-Products-Risk-Assessment-Report-PDF.pdf/ https://www.healthline.com/nutrition/arsenic-in-rice/

Arsenic in bottled water: https://www.consumerreports.org/water-quality/arsenic-in-some-bottled-water-brands-at-unsafe-levels/

The need for ethics in technology and the study of microplastics:

https://search.proquest.com/openview/ff72ee256d347d2898b0255b6e93c88e/1?cbl=33050&pq-origsite= gscholar/

Teaching Time: Kathy Jetñil-Kijiner's Critique of Bioregionalism

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All bioregional approaches to the writing, reading and teaching of poetry share a commitment to paradigm change. Their intention is to challenge, undermine and replace world views, cultural mindsets, unequal distributions of power that are predicated on the control and domination of both the human and natural environment. Using the imagination to transform space into place, bioregionalism argues that environmental crisis requires radical changes to how human communities think and act. It demands new definitions, new ethics, a new language. Bioregional discourse itself revolves around three terms central to this undertaking—dwelling, sustainability, and reinhabitation. As Cheryll Glotfelty et al. (2012) discussed, dwelling, or living-in-place, is characterized by a substantive, comprehensive engagement with our specific, immediate (local) physical and natural environment. Sustainability means practicing a way of life that recognizes the ecological limitations and vulnerabilities of that place in order to ensure that future generations will be able to live in it in the same way. And since most people in the world reside in areas that are to a certain degree environmentally damaged, reinhabitation involves moving beyond sustainability and adopting lifestyles that actively seek to repair ecological problems, to make a given place more suitable for sustainable dwelling (pp. 5-6). Bioregionalism thus articulates an ongoing process of renewal, resistance, and reimagination, a process that well-describes Kathy Jetñil-Kijiner's creative achievement in *Iep Jãltok*: *Poems from a Marshallese Daughter*.

In its pursuit of paradigm change, bioregionalism, like Jetñil-Kijiner, is fully committed to praxis, unifying theory and practice, indeed rejecting the distinction between the two. However, like any social or literary critique, bioregionalism is not immune to criticism. For example, Glotfelty et al. (2012) conceded that one potential problem with bioregionalism is that, almost by definition, it privileges the local at the expense of the global and can therefore appear at times to promote a retreat from the larger world. It can become a kind of self-denial, too limited in scope, and thus inadequate, because it ignores the economic, political, technological, and environmental realities of globalization (pp. 8–9). Ursula K. Heise (2008) claimed that this emphasis on an "ethic of proximity," this "focus on the local," would not be sufficient to address the unfolding planetwide problem. Heise advocated for what she calls eco-cosmopolitanism, envisioning "individuals and groups as part of planetary 'imagined communities' of both human and nonhuman kinds" (pp. 61–62). Jetñil-Kijiner would agree, since she is very aware that even though the Marshallese people are not responsible for the global warming and rising sea temperatures currently threatening their homeland with extinction, they (and other Pacific islanders) cannot go it alone and must have help if the Marshall islands are to be saved. Her poetry also suggests a second critique of traditional bioregional assumptions, because in the contemporary world many people and indeed whole communities and nations are being deterritorialized, forced to migrate by war, socioeconomic collapse, and environmental destruction. Jetñil-Kijiner might ask—how can people live-in-place if their place has been taken away from them, is disappearing, or is already gone?

In addition, bioregionalism has typically been spatial in orientation, focusing on defined, geographical biomes, or biospheres. While not necessarily denying this spatial orientation, Ruth Blair, in her analysis of Beverley Farmer's *The Seal Woman*, added a more perceptual component to the

discourse of place, challenging conventional, chronological, static understandings of time. She insisted that since the interconnections in *The Seal Woman* are temporal as well as spatial, involving both historical and mythic time, a proper bioregional reading of the novel must not distinguish between but instead integrate past, present, and future. For Blair, building on what Maurice MerleauPonty has referred to as sedimentation, "the presence of all presents in our own," including future presents, the gradual but constant accumulation of layers of time "offers rich insights into how we might connect current ecological concerns in thinking about the bioregion" (Glotfelty et al., 2012, pp. 173–174). In the case of Jetñil-Kijiner, this layering of time encourages an expanded vision of what living-in-place might mean. Allowing a more temporally fluid poetic voice, it provides a fresher look at the ecological implications and interpretations of poetry which does not adhere to Western notions of linear time, poetry like hers that speaks from the future as well as from the past and present.

Her entire book is structured to reflect this circularity and sedimentation. Opening and closing with two nearly identical poems called "The Basket," she frames the collection with examples of spatial prosody that harken back to John Hollander's 1966 "Swan and Shadow." But her typographical expertise, which she returns to later in "Fishbone Hair" and "Lost at Sea" is more than just visually arresting. It also serves to foreground the open (organic) form that characterizes *Iep Jāltok* as a whole. Using not a meter-based but a breath-based poetic line, she connects the matriarchal indigenous tradition to the Whitmanian, with the images on the page creating a liberating effect that enables the poems to be read in multiple directions. Such an effect also expands their thematic impact, with the literal meaning of basket—that which carries something else—expanding to include a woman's womb, the book of poems itself, and the Marshall Islands, all of them places of life and creative sustainability. As a pair, the two poems also serve to emphasize Jetñil-Kijiner's consistent juxtapositioning of the chronological and the non-chronological, while reinforcing her belief that poetry is best experienced not cognitively but visually and orally, or rather, aurally, that at least initially the meaning of a poem must be felt physically, biologically, ecologically. The entry point for any poem is performative.

The book is divided into four parts and this too reflects her formal and semantic concerns with time. Part One is entitled "Iep Jāltok," and it establishes the Marshallese mythological and familial traditions, the Marshallese ancestry, on which the rest of the book and indeed Marshallese culture are founded, introducing recurring symbols such as the sail and Lidepdepju in the process. The pace and intensity begin to pick up in Part Two, "History Project," with its poignant critique of Marshallese dependence and powerful indictment of the radioactive effects of US interference in post-World War II Marshallese history—the Castle Bravo nuclear test specifically. Here she also presents for the first time her niece Bianca, who dies of childhood leukemia, an all-too-common occurrence in the contemporary Marshalls. A skilled practitioner of narrative poetry, Jetñil-Kijiner continues to accelerate the tempo and emotional tension in Part Three, "Exile in Hawai'i," where she focuses on both the collective Marshallese diaspora and her own exile from the Marshalls as a teenager and young adult. Finally, the book reaches its crescendo with Part Four, "Tell Them," which contains the most overtly eco-critical poems, with their insistence on praxis and their exhortative call to action. Most significantly, these are the poems where posterity, the future, proactively and decisively speaks.

More narrowly, in terms of pragmatics, or information sharing, Jetñil-Kijiner often employs referential displacement, reversing the normal preference of speakers and writers of English for anaphoric as opposed to cataphoric cohesiveness. In its most specific sense, anaphora is the use of a word or phrase that requires an explicit antecedent for the referring term. The referential direction (from referring term to antecedent) is therefore backwards. However, in cataphora, the referential direction is reversed because the referring term comes first and requires a postcedent word or phrase to clarify meaning. What really matters is that anaphoric reference is by far the most common in English (and probably any language), since having the referring term follow its antecedent makes it much simpler and faster for readers or listeners to process and comprehend any given text. But often in *Iep Jāltok* Jetñil-Kijiner displaces anaphora, and thus temporal assumptions, creating bi-directional referential relationships that point both backward to the past and forward to the future. The most telling example can be found in the final line of "Last Days in the Bay," the concluding poem of Part Three: "Sliding into reggae nights I wind this clock never/ want to stop time is running out" (2017, p. 56). Here, anaphorically, "time is running out" on a relationship the speaker has had with her lover, while cataphorically the line points to the subsequent subject matter of Part Four and the temporal urgency of developing and implementing a multifarious, worldwide strategy for combatting human-made climate change.

The key word is simultaneity. For much like Anne Sexton, whose poetry in many ways hers most closely resembles, Jetñil-Kijiner has mastered the art of the trans-historical "I." Unifying the spatial and the temporal, she creates individual Marshallese speakers and characters who speak and act for themselves, in the here and now, but who rapidly become voices and actors for, and representatives of, the collective, the Marshallese people, those who have come before and those who will follow. In other words, her poems are simultaneously synchronic—at and about a specific moment in time – and diachronic – operating through and across time. For instance, the poem "There's a Journalist Here" provides a synchronic look at a Marshallese woman who has just seen her house flooded out and destroyed. The journalist wants to hear only about her tragedy, expecting that she will blame herself, that she will agree with her neighbors that it was her fault because she was so bold as to stare at the ocean too long, inviting its anger and retribution. However, within a few weeks she is thinking about the future instead, imagining a new, better house, with "doors/clean windows/on a grassy hillside." Her breath "filling and expanding" her lungs, all she wants "now/is to move/forward" (2017, p. 75). Come what may she refuses to be a victim. She claims, exercises agency. The poem then unfolds diachronically as well, repudiating the notion of victimhood and passivity for all Marshallese—past, present, and future. They are a people who have had, still have, and will continue to have an active, robust role in their own lives, in making the decisions that will impact their lives. They have been, are, and will be subjects, not objects. This trans-historical "I" thus becomes the defining characteristic of Jetñil-Kijiner's poetry and the signature mark of her poetic style. It is also what gives her book its rhetorical reach, its persuasive power. The poems are unapologetically feminist and unabashedly indigeneous, yet they are still accessible to readers and listeners who are neither female nor indigenous. Much like the goals and tactics of her social-environmental activism, the poems, though rightfully angry on occasion, seek not to exclude but to include, to build alliances not divisions. They have a universal feel to them, touching chords that are not contingent upon gender or ethnicity.

Along with the earlier Bianca poems, "Two Degrees" extends simultaneity into its most intensely private (personal) and most manifestly political (public) realm. In the first three stanzas the speaker takes the temperature of her feverish one-year old daughter, LiPeinam. The thermometer reads 99.8 degrees, but the doctor tells her that "technically/100.4 degrees/is a fever." In the fourth stanza she thinks about how only a few degrees can make such a critical difference. The next three stanzas move from her and her daughter to a discussion of how dangerous two degrees are to island nations like the Marshalls. She is told by a colleague at a climate change conference that keeping an increase in global warming to two degrees is just a starting point for negotiations, and she responds that for "my islands 2 degrees/is a gamble/at 2 degrees my islands/will already be under water/this is why our leaders push/for 1.5." She reflects on the catastrophic difference that a mere 0.5 degrees represents before returning to a delightful stanza focusing on the now healthy, energetic, playful LiPeinam. That image in turn triggers a recollection of a major flooding disaster on Kili island, where a clinic was inundated with seawater and the patients were barely evacuated in time, their hospital beds wheeled outside into the hot sun as the clinic became "a wild water world/a rushing rapid of salt/a sewage of syringes and gauze." Transposing the personal into the political so effectively then allows Jetñil-Kijiner to conclude the poem by transposing the political back into the personal, reminding us that beyond all the data, all the dry bureaucracy of science and international aid organizations, there is "a toddler/stomping squeaky/yellow light up shoes/across the edge of a reef/not yet/under water" (2017, pp. 78–79). She puts a human face, her daughter's face, on the magnitude of the consequences of a simple half degree. The cost of failure to past, present, and future generations of Marshallese will be high.

But in terms of this discussion of temporal layering, this ability to conflate time and place, the quintessential poem is "Tell Them." Here, and characteristically, she starts at the personal level, with a present-day speaker preparing a package full of Marshallese jewelry and baskets for a friend in the United States. Inside the package is a note, instructing her friend that "when others ask you/where you got this/ you tell them/*They're from the Marshall Islands*." In general, Jetñil-Kijiner's poetic technique is exceptionally alliterative and based on strategic juxtapositions, refrains, and repetitions. Her poems do not typically remain in stasis, at least not for long, accelerating from static to dynamic and at times de-accelerating back to static in order to produce an iconic relationship between form and content— poems that are about movement, mobility, and migration, poems themselves that are mobile, that move and migrate. In "Tell Them" she unveils her entire repertoire, in particular the relentless repetition of the title phrase, which in the above quote is clearly a singular "I" addressing a singular "you." In addition to one use of the "show them" variation, she repeats the title phrase 18 more times in the poem to articulate her and her people's pride in being Marshallese, in their creation myth, their navigational skills, their physical environment, their belief in God, their sisterhood, their closeness to rising sea water, their fear of what may come next, their distrust of endless political and scientific talk, their need for action, and their sense of urgency, their sense of time slipping away. However, only at the last does she go back to "you tell them," all the rest being in the imperative, the command form "tell them." And when she does finally get to that second "you tell them," both the speaker and the reader of the note inside the package are most definitely plural. That reader and in fact the audience for the whole poem is meant to be the entire world. Even more interesting are the speakers, for here Jetñil-Kijiner delivers her most innovative temporal shift, a chorus of posterity, of Marshallese children not yet born demanding that their future homeland be there for them so they can be born: "You tell them/we don't want to leave/we've

never wanted to leave/and that we/are nothing/without our island" (2017, pp. 66–67). The polemical effect is dramatic. The future intervenes directly into the present to insist on its right to a future.

Resisting closure, creating open-ended poetry structured on a framework of spatial, temporal, and referential shifts, or displacements, reinforces Jetñil-Kijiner's link to, and expansion of, bioregionalism, because the ultimate displacement in *Iep Jāltok* is physical, that of the Marshallese themselves, along with their language and culture. Thus, the book functions as a potent reminder that any definition of place is incomplete if it does not recognize the central role the imagination plays in establishing and maintaining healthy environmental relationships. And her active interpenetration of the material and the imaginative world fits well within a cognitive framework that asks and answers questions about how it is we actually "know" or understand a place. Adapting from Gregory Bateson, Serenella Iovino (2017) claimed that "within and around the ecology of living forms an ecology of ideas, or of mind, exists, which strictly interacts with the former one." Mind is no longer simply a synonym for self or brain, but is instead, in Iovino's words, "an ecological function mirroring [. . .] the interrelatedness between the self and the environment" (p. 104). What results from this perspective is a necessary re-conceiving of the human mind. No longer seen as a separate, isolated, discrete entity, it can now be viewed as a locus of intersection where the internal and the external, the self and the material world, meet, interact and co-exist. In short, for Iovino, "to imagine a place is to always imagine *with* a place" (p. 105). This imaginative act, this ecology of mind, is a prerequisite for any long term, sustainable strategy of environmental and cultural renewal. As Iovino pointed out, a community, society or culture becomes fundamentally disconnected from the environment when it has become alienated from its imagination of that environment. Such a disconnect is always, in the long run, schizophrenic, and is the base cause of any ecological crisis. Effective solutions to environmental problems, effective treatments for environmental "diseases," solutions and treatments that address causes not symptoms, therefore require a re-imagining of self and nature that eliminates the disjunctions that typically characterize their relationship. Iovino referred to this process as "narrative reinhabitation," which she describes as a "cultural-educational practice that consists of restoring the ecological imagination of place by working with place-based stories. Visualizing the ecological connections of people and place through place-based stories is a way to remember a dismembered unity, to enliven our cultural and ecological potentialities—to reanimate the world" (p. 106). False dualities, false dichotomies, must be resolved for the sake of environmental survival. Writing about the Po River Valley in Italy, Iovino's diagnosis can easily be extended to what has occurred in the Marshall Islands. And her prescription of narrative reinhabitation is exactly what Jetñil-Kijiner is doing in *Iep Jāltok*.

Working in her own way then, remaining true to her own life experiences, true to her own voice, Kathy Jetñil-Kijiner, in the book as a whole and in "Tell Them" in particular, is able to persuasively synthesize various bioregional arguments into a compelling aesthetic and thematic argument for a definition of ethics, a definition of place, a definition of time that unites the cultural and the ecological, the spatial and the temporal. One cannot be understood (or taught) without the other. In the finest tradition of oppositional poetics, she dissolves the dichotomies, dismantles the either-or binaries, offering a path forward to new relationships. In so doing, she creates the possibility of a much more transformative pedagogy, an educational experience that can change the way in which students and teachers imagine the world and their role in it, an educational experience that can

change lives. Because in the final analysis, what Kathy Jetñil-Kijiner does in *Iep Jāltok*: *Poems from a Marshallese Daughter* is remind us that any pedagogy, any curriculum, any classroom, any meaningful, productive concept of literacy must recognize and respect the intimate connections between human communities and the non-human natural world. She reminds us, that in the 21st century, much is at stake.

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Not the Super Man, but the Saved Man: Fyodor Dostoevsky's *Crime and Punishment*

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Fyodor Dostoevky's 1866 novel *Crime and Punishment* has been acclaimed for its penetrating analysis of the moral dilemmas and socioeconomic issues associated with committing an appalling crime in the depths of equally appalling poverty and alienation. The novel's protagonist, Rodion Romanovitch Raskolnikov, is a destitute law student living in a small room in St. Petersburg. Raskolnikov has stopped attending classes and begun to neglect his own mental and physical wellbeing, while becoming increasingly obsessed with ideological arguments about social justice, power, and the inequities of existence for the poor and downtrodden. He spends much of his time devising a scheme to kill and rob Alyona Ivanovna, an elderly pawnbroker in a ghetto district of dark stairwells and garrulous drunkards. Eventually the idealistic Raskolnikov devises a philosophical rationale for such a murder, which he first thinks will correct the inequality and injustice he sees all around him. The intensity of the novel is dramatically increased when Raskolnikov follows through with his homicidal plan, murdering Alyona with an axe and accidentally killing her halfsister, Lizaveta, after she stumbles upon the scene. Thus, begins Raskolnikov's dizzying descent into moral perplexity and psychological anguish as he becomes more and more paranoid about the legal and spiritual consequences of his crime.

The rationale behind Raskolnikov's actions is the great theme of the novel and is feverishly articulated before and after the murder. He initially invokes the Utilitarianism of John Stuart Mill to justify what he is about to do, the logic of utilitarian philosophy leading him almost inevitably to a point of view that uncannily anticipates Friedrich Nietzsche's concept of the "overman" or *Übermensch*. Raskolnikov, in the words of Joseph Frank, turns into "a hater rather than a lover of humanity" (p. 489). He develops and embraces what Frank calls "the growth of a proto-Nietzschean egoism among an elite of superior individuals to whom the hopes of the future were to be entrusted" (p. 494). But the aftermath of the crime, expressed in the tortured convulsions of Raskolnikov's conscience, reveals significant insights into Dostoevsky's own views on crime, punishment, and redemption that are ultimately rooted in his Christian, Russian Orthodox beliefs and practices.

At the beginning of the novel, surrounded by the squalor of St. Petersburg, Raskolnikov is motivated by what he takes to be the humanitarian and altruistic impulses of Utilitarianism. As John Stuart Mill writes, "The creed which accepts as the foundation of morals *utility*, or *the greatest happiness principle*, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness" (Burtt, 1939, p. 900, author's emphasis). Utilitarianism, then, is the doctrine that promotes the committing of any action insofar that it promotes happiness, more specifically, the greatest happiness of the greatest number of people. Raskolnikov's later, envisioned role as the *Übermensch,* therefore coincides (at least on the surface) with the fundamental belief of Utilitarianism. But Dostoevsky is possibly the most eloquent critic in Western literature of the utilitarian belief that actions are not nearly as important as the results or consequences that come out of them, arguing that any such "ends justify the means" approach is profoundly amoral.

This amorality is best exemplified in the famous tavern scene, when Raskolnikov listens to a conversation between an army officer and a student in which the merits of humanitarian assassination, the "political economy" of eliminating the useless are discussed: "A hundred thousand good deeds could be done and helped, on that old woman's money which will be buried in a monastery! Hundreds, thousands perhaps, might be set on the right path; dozens of families saved from destitution, from ruin, from vice, from the Lock hospitals—and all with her money" (p. 68). More importantly, Raskolnikov also overhears the student say, "Kill her, take her money and with the help of it devote oneself to the service of humanity and the good of all. What do you think, would not one tiny crime be wiped out by thousands of good deeds? (p. 68). In addition, during his walk after receiving the letter from his mother, Raskolnikov ponders murdering Alyona and giving her money to his mother and sister, who he felt deserved it more than Alyona did, signifying his professed desire to commit a crime in order to benefit people other than himself. His intentions to murder Alyona and steal her money shift from merely helping himself out of poverty to helping others, especially after the student-officer conversation in the tavern. Later it is revealed that the ideas the student was talking about correlated directly with Raskolnikov's beliefs, as explored in the article that he wrote during his time as a student. Raskolnikov is convinced he will become noble after committing a beneficial murder, one that will have utility, giving meaning to the people and the world around him.

Alyona's money, however, plays an important role here. The student says so himself in his conversation with the officer, that with Alyona's money thousands of people can be saved. The problem though is Raskolnikov's decision not to utilize Alyona's money for the good of the people he intended to benefit. Instead, he steals only several personal items from Alyona, and in a panic buries them under a rock on the outskirts of the city. The noble murderer (in reality, a weak, paranoid Robin Hood) does not even open her purse. He does not peer inside to see how much money it contains. What, then, was the point of murdering Alyona when Raskolnikov does not end up taking the money? What, then, was the point of this crime when "thousands" do not end up benefitting in the way that was initially intended? The explanation to these questions can be found in the truth that rational ideas do not always translate into viable moral projects. We often simply mistake ideas for reality. Furthermore, as Frank points out, Utilitarianism has "transformed all [of Raskolnikov's] impulses of compassion into an attitude of contempt" (p. 495). And, as he will soon learn, the person who conceives a grand idea or scheme is not necessarily the one most qualified, physically or mentally, to carry it out.

Raskolnikov is then captivated by his own homespun theory of the "overman," which resembles Nietzsche's, and which will result in his near total alienation from everyone around him. The *Übermensch*, as described by Nietzsche in his 1883 *Thus Spake Zarathustra*, is the "overman," a utopian figure who has mastered servility and decadence in himself and achieved full power over his destiny. Such a being is no longer a slave or victim of socioeconomic determinism and blind faith, nor a prey of his own rancor and bitterness: "What is the ape to man? A laughingstock or a painful embarrassment. And man shall be just that for the overman: a laughingstock or a painful embarrassment" (p. 124). The idea of the "overman" was conceived to serve as the penultimate goal of individual human existence, a being who achieves true nobility and wisdom by overcoming what is human, all-too-human in himself. It was not meant for the masses, the common people, but the exceptional ones only. As Walter Kaufmann points out, for Nietzsche, the "overman" will refresh or reinvigorate the "meaning of the earth" (p. 125) – a visionary idea, a poetic allegory of self-overcoming created

by Nietzsche to inspire superior beings to transcend their decadence and elevate the human condition to semi-divine levels of accomplishment.

While a student six months earlier, Raskolnikov had published "On Crime," where he had articulated his theory of a superior being that is above moral law (a good example of how Nietzsche was influenced by his reading of Dostoevsky, who he claimed was Europe's "greatest psychologist"). In the article, Raskolnikov divides people into two categories: the "ordinary" and the "extraordinary." The former are the masses, or the herd, who meekly follow the established order, while the latter are a small elite, made up of people who "seek in various ways the destruction of the present for the sake of the better," his exemplar being Napolean Bonaparte. The "extraordinary" will always commit crimes, but since they do so to improve humanity they are ultimately benefactors not destroyers: "If such a one is forced for the sake of his idea to step over a corpse or wade through blood, he can find in himself, in his conscience, a sanction for wading through blood" (Frank, 2010, p. 489). Raskolnikov's idea of the Super Man comes from this article, and the intensity of that idea overwhelms what in *The Miraculous Years* Frank refers to as Raskolnikov's "mental imbalance" and "monomania" (pp. 110–111). He is in "the grip of this monomania [. . .] the grip of his desire to prove to himself that he truly belongs to the 'extraordinary' category" (p. 111). But Raskolnikov is really just a country boy from the provinces who has read a little college philosophy and he is suffering from ideologically intoxication. He is a crusader for something that only makes sense in an academic journal. And the closer he brings his ideology to reality, the more he takes it literally, the more disturbed his soul becomes. Clearly, the thought of such a crime is different than the action of committing it, and Raskolnikov has already been physically debilitated by his poverty and mental turmoil.

His intentions, his article, and his thoughts, melding prior to committing the actual murder of Alyona and Lizaveta, all endorse the will to power of the *Übermensch.* Moreover, Raskolnikov states explicitly that he believes in the *Übermensch* during his conversation with police investigator Porfiry Petrovitch: "I simply hinted that an *extraordinary man* has the right [...] that is not an official right, but an inner right to decide in his own conscience to overstep [...] certain obstacles, and only in case it is essential for the practical fulfillment of his idea (sometimes, perhaps, of benefit to the whole of humanity)" (p. 260). Raskolnikov is attempting to reason with himself, during his time of moral dilemma, that a man striving to be extraordinary, or the *Übermensch*, should be allowed to commit a certain crime if that crime served to benefit humanity—and, in that way, also admits that he himself has followed his own beliefs (as mentioned in his article) because he, in striving to become the *Übermensch*, felt it necessary to murder Alyona in order to benefit those thousands that, as the student had said, "would be saved from corruption and decay" (p. 68).

Raskolnikov failed to become that "public benefactor" that Mill argues is essential to utilitarianist practices, due to his failure to actually take Alyona's money and spend it on the rest of the poverty-stricken population in St Petersburg, and he also failed as an *Übermensch*. As time continues to pass after he commits his murder, and as he grows more and more paranoid and psychologically anguished at the thought of being discovered, Raskolnikov cannot come to terms with himself – that not only has he failed at becoming the extraordinary man he so wanted to be, but he has also put himself in a situation where there is no escape from the punishment and consequences that he is

destined to inflict on himself and receive from law enforcement. With Sonia's guidance, the truth eventually emerges as Raskolnikov becomes increasingly torn by guilt over his realization that he has perpetrated a horrible crime and yet has achieved nothing. The moral horror that besets his conscience follows him throughout the novel, and he becomes convinced that he had committed a crime for no apparent reason at all except that he could do it on the spur of the moment. His febrile body could somehow wield an axe and commit murder, hardly a noble act. He has not become the Super Man that he wrote about and obsessed over, and thus he feels that he has failed himself, and so the rest of the world, entirely.

At the end of the novel, Raskolnikov confesses to his crime, never mentioning that he intended to benefit other people and glossing over the philosophical notions discussed in his article, telling everyone that the reason behind his murder was purely a matter of self-pity, a result of "his miserable position, his poverty and helplessness" (p. 528). He is condemned to prison for eight years, during which time Sonia visits him continuously. After several months in prison, Raskolnikov reflects on why he decided to confess his crime instead of commit suicide, thinking that "consciousness might be the promise of a future crisis, of a new view of life and of his future resurrection" (p. 537). He turns, then, to Christianity. He attends mass, he reads the New Testament, and finds solace in his life with Sonia by seeing it as a new life with God. In the events of the epilogue, Dostoevsky's somewhat ambiguous fictional treatments of crime, punishment, and redemption become more aligned with his personal faith. After Sonia first finds out about Raskolnikov's crime, she admonishes him and tells him: "Suffer and expiate your sin by it, that's what you must do" (p. 416). She tells him with conviction to bear his cross when he goes to meet his suffering, implying that the only way to redemption is to confess: "When you go to meet your suffering, then put it on. You will come to me, I'll put it on you, we will pray and go together!" (p. 418). Dostoevsky clearly believed in the "redemptive and regenerative power of suffering," and that "life is the expiation of sin by suffering" (Townsend). Although many argue that *Crime and Punishment* did not need an epilogue in which Raskolnikov's adjustment to his life in prison, his acceptance of his wrongdoings, and turn to the Christian faith, are all narrated in a surprisingly positive turn of events, Dostoevsky's portrayal of Raskolnikov's redemption and salvation through confession and repentance reflects his own innermost belief that God can grant "gradual renewals" to man, "gradual regenerations" that can initiate people into "new unknown lives" in Christianity. There is a recurrent emphasis—in *Crime and Punishment* and his other novels--that Dostoevsky places on suffering and its importance in the process of regeneration and salvation. Raskolnikov's true power is not superiority but humility, a powerful humility that showcases an unlikely recipe for self-overcoming for the mythical *Übermensch:* confession, expiation, regeneration, and salvation.

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The Origin of Originality

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All originality comes from reading --Hans Sachs

The ideal of the artist is never to reproduce the same work *ad infinitum* --Felix Guattari

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Originality has never been a popular topic in philosophy, although "origins" as such have been an abiding concern, mainly because philosophy typically occupies itself with discerning and formulating the universal forms of the *laws of thought*—the logical schemata or syllogisms of inductive and deductive reasoning, and the *a priori* categories which determine the conditions for the possibility of human thinking as rationality,   as rulebound reason and ideation in every life. If you consider Plato's theory of forms, which are both universal and eternal, you get the gist of what philosophy was all about for centuries. In his *Timaeus* Plato describes the origin of everything. "The universe, he [Plato] proposes, is the product of rational, purposive, and beneficent agency. It is the handiwork of a divine Craftsman who, imitating an unchanging and eternal model, imposes mathematical order on a preexistent chaos to generate the ordered universe (*kosmos*)."[1] Philosophy seeks to make thinking and rational experience predictable, foreseeable, within the limits of human understanding. Mortal thinking, i.e., finite thought, obeys the laws of thought; divine "thinking"—if we can call it that—is infinite and original. It originates, generates new things. God is an originator, a craftsman or *demiurge* in Plato, and for Aristotle, the *unmoved mover*, hence, separate, supreme. Whether in philosophy, science, or religion--and these were not distinct disciplines in the ancient world—you find stories about origins, not originality, about creation, but not creativity. The aspiring creators who transgress the divine order, such as Prometheus, get punished as lawless renegades. The rare genius described by Kant is a singular, incomparable intellect free from servitude who originates new rules that attract the scrutiny of other geniuses, while common folk slavishly follow those rules and mimic originality. If genesis is of divine origin, attempts by humans to fathom its depths or claim its power strike us as profanation. According to the *Cloud of Unknowing*, it is impossible to understand God's ways, which are beyond our grammatical and intellectual faculties: "Young, presumptuous disciples" and exegetes mistakenly attribute physical features to spiritual forces, so that even simple words like "in" or "up" are incomprehensible when used as referents for God's Kingdom.[2]

It is commonly assumed that the scientific and philosophical developments of the Enlightenment alleviated the fearful condition of the incommensurability between mortal fallibility and divine perfection by promoting the universal applicability and pertinence of reason, which could systematize and illuminate human existence against the darkness of cosmic unknowing. Leibniz had already anticipated this development with his phrase, *Nihil sine ratione*: "Nothing is without reason." Such is the universal *principle of reason,* the precondition and driver of human progress following the Enlightenment. According to Heidegger, reason infiltrates cognition and mutates in paradigm shifts over the centuries to modernity: "It is the modern manner of thinking in which we daily reside

without expressly perceiving or noticing the demand of reason to be rendered in all cognition."[3] Heidegger, who did not oppose rationality per se but sought to critique its ontological supremacy and eclipse of less aggressive ways of being, foresaw the inaugural stirrings of an ominous development described by later thinkers: technical rationality as the logic of global capitalism, which privileges Big Data, marginalizing, devaluing, or excluding any linguistic expressions that are not information, that are ambiguous or symbolically ambient, hence inefficiently processed, hence impractical: literature, speculative philosophy, poetry, and so on. It is not as if this kind of negative cultural attitude is decided by individuals. Even if an editor of a publishing house says, "Poetry doesn't produce blockbusters," it is hardly her original idea; she is only the mouthpiece for the rational profit motive directing her cognition. Nor, as a college student, could she have imagined herself condemning poetry as unprofitable when she grew up. Reasons, set to work in pursuit of an objective, produce outcomes that in turn supply *their own* objectives beyond the scope of their creator. The technical design, development, and military use of the atomic bomb exemplifies this process. Many of the scientists who worked in atomic physics during WW II were astonished and appalled when Hiroshima and Nagasaki were bombed by the Americans. The mathematical research was intrinsically compelling to physicists like Werner Heisenberg and Niels Bohr; the experimental work, the equations, the radical insights and disagreements, together absorbed their attention as a project in itself, with its own immanent justification; and they gave little thought to the idea of *another context* in which their brilliant efforts would suddenly transition from *pure* research to *applied* research. After the atomic bombing of Japan, Heisenberg and his colleagues vowed to always consider the wider cultural consequences of their scientific inventions. They distinguished between *discovery* and *invention*: "Otto Hahn's fission experiments were a discovery, the manufacture of the atomic bomb an invention."[4] Even when discovery is guided by a strong hypothesis, there is something accidental or unknown about it, some outcome that cannot be fully predicted; whereas invention, by design, produces a specific mechanism for a specific purpose and cultural milieu.

Insofar as originality is typically associated with novelty and the unforeseen, it seems closely related to discovery. This will prove to be a useful distinction when discussing the origin of originality, particularly in the context of creative writing today. As one tracks the historical evolution of the principle of reason into the digital era, it is hardly enough to describe its allergy to literary forms in its drive to compile, process, and monetize Big Data. Although those forms are less popular than ever among the so-called reading public, where literary reading has declined for years, the deeper reach of technical rationality has done even more damage by disempowering creative discovery in favor of slavish mimetic practices that reproduce commercially popular forms. This is an arguably unwelcome but fascinating development manifested in creative writing workshops, as will be shown in a moment.

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You might be wondering if we have strayed too far from our topic, the origin of originality, but what Heidegger is implying in his study of Leibniz is that if human thinking is inculcated by reason or in the "orbit of the mighty Principle of reason" (p. 34), we are not free thinkers but constrained thinkers; and the conditions for the possibility of originality seem unpromising if the *freedom to think freely* is already subordinate to the principle of reason. Now, to speak of reason in this way sounds absurd to instructors tasked with teaching critical thinking to students who have never pondered

the rules of logical expression, who have never heard the phrase *Nihil sine ratione*. Nevertheless, the principle of reason tacitly formats their cognition as an instrumental worldview. Some students openly dislike learning logic because they see it as abstract and impractical. Their very impatience toward a subject matter that is not immediately transparent is a symptom of instrumental reason. According to Heidegger, they will express this same impatience toward works of art and literature replete with ambiguity. Everything must have its reason for existing (*raison d'etre*) stamped on its surface or be dismissed as useless. Not only must everything be of practical use, but efficiently understood. Even of artistic masterpieces one expects reasonable objectives and outcomes. The principle of reason does not compel us to ask of art the humble, hospitable question, "What do you mean?" but "Why do you exist—why are you here—what purpose do you serve?" But anyone for whom art is a calling will tell you that art does not disclose its origin, purpose and meaning in a bar-coded label attached to it. The very lifeblood of art is ambiguity—polysemic intensity. Heidegger cites two lines of poetry from the 17th century mystic Angelus Silesius that forthrightly depict natural beauty beyond the claims of reason. "The rose is without why: it blooms because it blooms/It pays no attention to itself, asks not whether it is seen" (p. 35). The beauty of a rose speaks for itself, on its own terms, and its purpose and meaning are not strictly accountable to rational criteria. Likewise, poetry, literature, music, and other creative forms of expression issue from an original source whose "orbit" is not the system of instrumental reason. Such forms do not beg to be assimilated into the world of practical existence, . Rather, artistic forms silently ask us to have the patience, respect, and insight to understand the original conditions from which they emerge and the world which they make for our edification and enjoyment.

Given the ubiquity of reason, which today on campus manifests itself in the curricular prioritizing of STEM disciplines, it remains a mystery how we can appreciate, never mind produce, uniqueness or novelty in the arts and sciences, something disobedient, uncommon, unexpected, unforeseen, inventive, ambiguous—you might say, unlawful. This is an old problem. The general orientation of the Romantic Movement, which, like one of its subgenres, Gothicism, never came to a definite end, was a backlash against the Enlightenment principle of reason which had taken the ancient thrones away from religion and superstition. The baby was taken with the bathwater; scientific culture was too encompassing, leaving no room for poetry and passion. In his justly famous book, *The Mirror and the Lamp*, M. H. Abrams described the Romantic revolution as a turn from mimetic realism (the mirror) suitable for the Age of Reason, to Romantic expressionism (the lamp). Why did the fondness for personal and naturalistic expressionism arise so aggressively in so many areas of artistic and philosophical activity? It was the passionate return of what had been repressed or excluded during the Enlightenment. The great Enlightenment thinkers such as Voltaire, convinced as they were of the universal virtues of scientific reason, underestimated the human desire for originality and self-expression. Isaiah Berlin eloquently epitomizes the revolt against the principle of reason as follows:

> If you asked yourself what were men after, what did men really want, you would see that what they wanted was not at all what Voltaire supposed they wanted. Voltaire thought they wanted happiness, contentment, peace, but this was not true. What men wanted was for all their faculties to play in the richest and most violent possible fashion. What men wanted was to create, what men wanted was to make, and if this making led to clashes, if it led to wars, if it led to struggles, then this was part of the human lot. A man who had been put in a Voltairean garden, pared and pruned, who had been brought up by some wise *philosophe* in knowledge of physics

and chemistry and mathematics, and in knowledge of all the sciences which the Encyclopedists had recommended—such a man would be a form of death in life.[5]

Although creative originality was an intrinsically appealing topic to romantic thinkers and artists, it was ironic that they were inspired to no small extent by the idea of genius developed by Kant, a quintessential Enlightenment philosopher who hated anything to do with the emotional excesses associated with Romanticism, as Berlin makes clear (p. 68). Yet it has never been a secret that Kant greatly admired Rousseau, one of the most influential movers and shakers of the Romantic movement. (It is commonly known among Kant scholars that the only portrait still hanging in Kant's house at the time of his death was of Rousseau.) What attracted Kant to Rousseau was the latter's colorful and unapologetic depiction of individual freedom. As Berlin remarks, "Kant was virtually intoxicated by the idea of human freedom" (p. 68). Yet he lived a restrained and predictable lifestyle. What he did was pump the spirit of freedom into his theory of genius. Hence it was to no one's surprise that the romanticists primarily took over the concept of genius developed in Kant's *Critique of Judgment* as something associated less with epistemology or metaphysics than with a kind of distinguished but ungovernable spirit, an individual mind (*Geist*) that is not slavish but autarchic, and that produces "aesthetic ideas" that force reason to reflect on its own limitations because its concepts fail to grasp the original majesty of genius.[6] Artists (especially poets) exercise their freedom from the principle of reason in the free play of imagination and understanding, but not all of them have spirit; geniuses are blessed with an original creative spirit that conjures ideas, expressions, and images that exceed logical concepts and open the mind, which it has quickened and intensified, "to an immense realm…" of bold and novel ideas and images. Kant was undoubtedly indebted to Rousseau's claim about the sovereignty of the incomparable individual on the first page of his *Confessions*: "I am not constituted like anyone I have ever encountered. I dare venture that I am not made like anyone else in the world, and though I might be no better, at least I am different."[7] Kant was the philosopher who argued that rules don't apply to geniuses, but rather, geniuses invent new rules that captivate the minds of other geniuses. This is not the same as copying; lesser minds, often those of pupils, imitate geniuses, but "this imitation becomes aping if the pupil copies everything, including the deformities that the genius had to permit only because it would have been difficult to eliminate them without diminishing the force of the idea" (p. 187). Those eccentric individuals, geniuses, were said to be original, and originality is often different--outlandish and obscure. This is arguably what Ortega, an existentialist, meant when he said, "only individuals create."[8] If you are thinking of Nietzsche here, you are not off base, although he was preceded by a group classified as "early romantics" which included prodigiously clever writers such as Schiller, Hamann, Novalis and Holderlin.[9]

Two branches of modern philosophy appeared to take up the question of originality with some rigor and sincerity: existentialism (Heidegger, Sartre, etc.) and process philosophy (Bergson and Whitehead). Both are considered "romantic" philosophies by mainstream analytic philosophers. In existentialism, the primary focus is romantic insofar as originality, otherwise called "authenticity," is based in the behavior of the individual, whose sovereignty breaks with the universality of the principle of reason, but also with universal laws that predefine the identity and value of human existence and hence set the limits and possibilities of human freedom:

Existential philosophy formulates a refusal of the thought, proper to classicism, that equates the promotion of the subject of universality with the promotion to sovereignty. The existential protest is not a protest against the law. It is a protest against the universal form of law… And existentialism argues, positively, that the individual and not universal subject is required for truth… [It] argues, positively, that the individual life, constituted in an individuating law, is alone capable of value and capable of producing values. The one that makes himself useful by making himself equivalent to and interchangeable with anyone, the one without a law and a destiny of his own, is without worth.[10]

Bergson, mentioned earlier, found human temporality to be the overlooked source of spiritual freedom and hence, originality, insofar as individual consciousness, once freed from the artificial constraints of standardized time and space determined by scientific reason, is continuous with cosmic becoming, "the continuous creation of unforeseeable novelty which seems to be going on in the universe." On the topic of novelty, Bergson confessed: "As far as I am concerned, I feel I am experiencing it constantly."[11] For Bergson, then, standard time is the great leveler, stifling the intuitive powers of originality, but he is aware that the principle of reason predisposes human temporality in daily life to conform to a standardized format that "freezes" or spatializes time rather than enlivening or quickening it intuitively as a continual process of becoming. Whitehead, who likewise privileged the concepts of process and becoming, coined the term "concrescence" to describe the emergence of creative novelty in an individual whose fluidity of life exhibits a spontaneous unity capable of forming its own worldview. As with Nietzsche, for Whitehead that individual worldview, which is an original outcome of an "occasion" of concrescence, does not represent the Hegelian totality, but nor is it subordinate to or of lesser value than a universally sanctioned collective worldview. It has its own intrinsic value as an utterly original "niche" in the cosmos,[12] as an intimately personal synthesis of reality, and culture needs it to diversify common knowledge of the world at large.

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For reasons—if we can call them such—that seem uninformed and short-sighted, the university that employs me has never established a creative writing program, although creative writing is the only consistent area of growth in English departments at a time of dwindling enrollment in the humanities. A few years ago, several colleagues and I submitted a proposal for a new writing "emphasis" or track within the English major that would be supported by currently available resources and staff. The proposal was shelved by administrators following comments like "It's not a good time for this sort of thing." Now, you never know all the problems administrators are dealing with, that they don't publicize. But my guess was that this vague but firm refusal presupposed that we must comply with the academic trend privileging practical vocationalism. One administrator said to me, "Be realistic: how many poets does Guam need?" To which I replied: "As many as possible; the culture of Guam cannot have too many poets." That's all I said. I was thinking about Robert Frost's "The Pasture," a poem which invites young poets to help clear the pasture spring, the source of vital sustenance, keep it from getting clogged with debris--a metaphor for how creative writers refresh language that the rest of us reduce to catchwords and clichés, tweets and emoticons. In short, Frost performs an ancient poetic ritual, harking back to Virgil's *Ecologues*, to illuminate linguistic sustainability as a problem of general ecology. Our use and abuse of language correlates with our inner

relation to the environment (*Umwelt*) and to each other (*Mitwelt*). Heidegger used many more words than Frost to convey the ecological pertinence of poetry in his *Unterwegs zur Sprache* (1959*)*.

What else is poetry good for? Now, I kept this question, and my thoughts about Frost and Heidegger, to myself, conscious as I was that to reply in kind to the administrator, that is, to justify poetry in practical terms, was to accept the rule of the *principle of reason*. Nevertheless, good reasons kept emerging that I never considered before. Just recently I read something *apropos* in the newspaper. Every day, before convening the morning meeting where they decide what news to publish, the current editors of the *NY Times* take turns reading a poem aloud. They say it makes them "more pensive."[13] If poetry makes us more thoughtful, do we need to fret about having too many poets? If you say we have too many poets, does that mean we are writing and reading too much poetry and therefore thinking too much? Is that the message educators want to convey when the President of the U.S.A. loathes reading? In his last book, The *Creative Mind*, Henri Bergson wrote that novelists and poets convert our attention from a practical focus to a more encompassing horizon that effectively extends our faculties of perception. Distinctive word choice, punctuation, rhythm, imagery and tone, all bring novelty into the lives of readers and quicken their intuitive powers.[14]

It was disheartening that the administrator who vetoed our writing program proposal was a philosopher who surely appreciates the dissident role suspected of poets in Republics ruled by tyrants— and we don't have to go back to ancient Greece and Rome to find such Republics. The difference is that in today's Republics, poets are not viewed as a threat, but as useless and unemployable. Yet it wasn't so long ago that Vaclav Havel and his fellow dramatists and poets secretly published their subversive *samizdat* writings in defiance of the Soviet occupation of Czechoslovakia, with Havel later becoming President in 1989 as the Iron Curtain crumbled into rubble and painful memories. Among all the dissidents in this astonishing drama called the Velvet Revolution, Havel, who wrote absurdist plays, was the most astonished; no one found this turn of events more improbable than the writer who became President of the Czech Republic. In short, we should never underestimate the transcendent power of creative expression in times of widespread cultural barbarism and political corruption such as we now face in the United States. On Guam, however, the obstacle to creative infrastructure development appear to be sheer complacency, a condition that often but not inevitably leads to cultural barbarism.

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Although our two creative writing courses remain popular among students, we lack professional writers who would typically be hired to teach in a bona fide writing program, so quirky members of the literature faculty like me periodically volunteer to teach creative writing as a lark, for the sheer novelty of it. I am the first to admit that if we had qualified novelists and poets on our staff, I would stay clear of the whole business. My professional *métier*, philosophic criticism, traffics in the misty vales of the afterlife of phenomenology, and hence offers no obvious advantages for conducting a writing workshop where young hearts and minds seek creative expression. For this reason, I supervise with a featherlight administrative touch, staying focused on student writings, avoiding philosophical digressions, occasionally prompting students to reroute their attention away from banalities and memes to the matter at stake in their short story or novella. We defer to those wise and sober workshop refrains: "Why bother?" "Does it matter?" "Hasn't this already been said in a more striking and original way?"

It is a curious thing that the latter issue, originality, seems to have lost its appeal, its critical urgency and pertinence. Few students seem overly concerned with trying to be original. It follows that, at the risk of generalizing, one of the changes in student writing that has caught my attention is the decline in originality. By this I mean that it is increasingly the case that students compose stories whose content and style come directly from popular media such as film, television, YouTube, video games, and so on. To the excited riposte, "But they used to make the same use of literary sources," I say, "Hold your horses; I will get to that issue in a moment." It is not a secret that the development of fandom has encouraged students to write fanfiction influenced by their favorite films, manga, graphic novels, and video games, many of them proudly forthcoming about this derivative relationship. Even so, a considerable number of students submit a story to the workshop apparently innocent of their sourcing, which is quickly and amicably exposed by other members of the workshop. Student A: "Hey, this prison setting feels just like *Orange and Black*, doesn't it? Or, "Hey, didn't you get this plot from *Counter-Strike*?" Once the source is pointed out, the author unapologetically admits its influence, expressing barely a trace of chagrin. One assumes they were genuinely blinded by their infatuation. It occurred to me that plagiarism is not the most accurate term for what happens in these cases. The cognitive and linguistic development of so-called digital natives is not separate from but fully integrated with internet feeds, memes, downloads, file transfers, and streaming contents. Hence, even the term "outsourcing" is inaccurate since thinking and its web-based sources are interwoven within an epistemological continuum. How can student borrowing and copying be plagiarism if the sources authored by others are immanent to the stream of consciousness? Cognitive dissonance immediately ensues when a digital native seeks to distinguish or disentangle "What's mine" from "What's yours." Today's students think *with* the internet and its sources and apps, so that unconsciously there is something like lawless and unacknowledged co-ownership of available materials.

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This epistemological phenomenon epitomizes a new frontier that poses challenges of which most academics remain clueless as they continue to insert conventional statements prohibiting plagiarism in their syllabi. Legally, of course, there are no grounds for claiming co-ownership of internet contents under current copyright laws, but what I am describing is not a legally sanctioned but epistemologically naturalized integration with digital sources on a vast scale that Bernard Stiegler critiques as a "noetic metamorphosis." What he means is that writing and thinking become standardized mimetic products through a "sterilization" of the transindividual process by which an individual writer's output would have formerly become creatively differentiated, or *original*, that is, transindividuated, by its interaction with another writer's literary output. Stiegler claims that all of our "cultures, cults, cures, and cares" have arisen from such powers of transindividuation, powers of recombinational originality, which are now homogenized through circuits of digital reproduction that operate within individual and collective memory.[15]

It is arguable that when Merleau-Ponty said "we borrow ourselves from others" he already glimpsed an issue of ontological import, although his focus was intersubjectivity, not digital networking. Only with the development of Felix Guattari's theory of the "three ecologies" did the machinic (today, digital) vector of human ontogenesis, which Heidegger had described as a technical

enframing *(Ge-stell)*, become fully comprehensible.[16] Bernard Stiegler has staked his career on diagnosing the implications of this "stupefying" psychosocial milieu of "digital tertiary retention" which he calls an "automatic society," in which human memory and cognition are "proletarianized" by commercialized media and hyperindustrial forces.[17] Constant social networking produces "a herd effect…that is highly mimetic."[18] All of these theoretical insights problematize the issue of originality as previously understood, that is, as an event of subjective individuation and transindividuation, in ways that the philosophers of Merleau-Ponty's generation would have found unimaginable. The same is true for the issue of plagiarism.

One can often predict fanfiction content according to what is trending on Netflix or Instagram. There were some mermaid stories written when the *Little Mermaid* was trending, and several stories about Rome and Florence when Instagram "influencers" were posting exotic selfies from those cities. When a young woman wrote a romantic story that takes place in Barcelona, another student who had seen the Netflix series on which it was based observed, "You get the details of the lovely setting just right, but you leave out the best character!" This critic was apparently blind to the fact that the author had substituted *herself* in the narrative for the film star, "to give the drama a more relatable texture."

The noteworthy (and curious if not incomprehensible) thing about this development, or trend, is that students tend to criticize a classmate not for a *lack* of originality in their borrowing, but for *straying from their source*. What is lauded in a workshop these days is verisimilitude of emulation. "I really *appreciate* (the childish Facebook "like" is strictly forbidden) your dialogue in this story. I mean, it sounds just like the characters in the X-Files." Now, to those who argue that writerly habits have not really changed, that before the internet literature always provided sources for inspired conscious and subconscious borrowing, it is necessary to point out that, until recently, it was unheard of for writing students to insist on mimetic verisimilitude. At least in my presence as a teacher, no comment like the following was ever uttered: "I detect Faulkner in your style, but at such a distance that I have to second-guess my own ear if that is indeed true, that I hear Faulkner. To sound like the *real* William Faulkner, you need to read him more closely, spend more time inside Faulkner's prose to absorb its rhythms. Have you read *The Wild Palms*?" Such an intuitively sensitive suggestion, which frankly assumes that the aim of the writer is to imitate Faulkner, would not have been made before the internet unless the assignment with which the writer was complying required something like *an imitation of your favorite writer*. That is another matter, and in certain circumstances a worthwhile exercise.

But as a common praxis among writers, overt imitation was unheard of before the internet except in parodic forms. I assume this is because direct imitation, which amounts to a denial of the writer's selfhood or what Baudrillard calls the "degree Xerox of the individual,"[19] used to be distasteful to young writers seeking to individuate themselves through their writing in the manner of the Romantic tradition. Hence it is obvious that fandom and overt forms of literary imitation are not paths of discovery for a young writer, nor of originality, but a peculiar sort of "invention," to recall the distinction made by 20th-century physicists. That is, they seek to produce artifacts that are known, have a specific audience and purpose, and are relatable to the wider culture and its commercial interests.

As I have tried to explain to my students, influence can work itself out in other ways besides direct imitation, such that individuation is not thwarted but intensified. But this sort of influence, genuinely *creative* influence as self-*discovery*, which is based more on the spirit than the letter, on hearing what the author *says* and not on copying *what she wrote*, asks of the student an attentional behavior and hermeneutic attunement that are intrinsic to another (a wholly *other*) temporal order, another *milieu* than social media. This would be the personal milieu of transindividuation in which the dynamics of influence incite not only, say, a stylistic mutation, but an increase in a young writer's existential exposure through a selective encounter with otherness. The traction of becoming which enables progress toward *maturity* firms up through adversity and turbulence, not through copying and complacency. This kind of individuation is not to be mistaken for identity formation. To individuate yourself via transindividuation as a writer by reading and writing is to risk your collective identity, cohort membership, and head into the unknown with one's "inner alterity" for company.[20] Writing *under the influence* of another writer does not secure identity, but, as a desired or desirable *selective encounter*, unsettles it productively in a precarious discovery of the otherness one has hitherto repressed, the alterity within, or *oneself-as- another*. Let's say I have begun writing purple prose like one of my mentors at Penn State, Paul West. Who or what am I becoming now that I have accepted the challenge of Paul West's advocacy of purple prose? Don't look at me, look at my writing, read it, welcome it or refute it; it is adventuring in purple prose, and the adventure is by no means over![21]

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Another related observation can be made here about the prevalent ethos of workshops today. Even before specific workshop remarks favoring verisimilitude, or mimesis over nonmimetic originality, students as a rule *prefer* when a classmate's story has a recognizable source from popular media and/or trending literary phenomena, such as *Game of Thrones*, which has incited innumerable fandom spinoffs. In other words, originality not only seems irrelevant, but poses hermeneutic problems for workshop members that find it bothersome or inconvenient to read something that either cleverly betrays its source or is off the beaten track in its content and style. In such discomfort we can discern the stirrings of the principle of reason, which prefers familiarity and transparency. In a workshop I supervised where students were required to write novellas, it wasn't until about midway in the semester, with novellas half written, when a student complained that a classmate's novella was based on an older video game of little interest to gamers today. When he recognized the game, however, he said he felt more favorably inclined toward the novella. Until that point, others in the workshop had treated the novella with silence or merely identified grammatical errors. The main problem, he said, was that "It took me too long to see where you are coming from." He explained that the source should have been more popular, hence recognizable at the start of the novella. "I would have enjoyed your story much more if I recognized *Silent Hill* in your early chapters. Look, you have to anticipate that many readers who play *Fortnite* will be unfamiliar with older video games like *Silent Hill* or *Doom* even if they have 'classic' status' among experienced gamers like yourself." Such critical observations about media sources parallel workshop complaints about literary writing under the influence of seldomly read authors like Melville and Woolf—even Thomas Pynchon. Such literary emulation is increasingly rare given the profusion of new media sources to imitate, but when it occurs, writers are told that they risk alienating today's readers who are not familiar with Melville, Woolf, and Pynchon. It is better to imitate recognizable sources from

new media genres. In short, not only does workshop culture prefer familiarity over originality, but familiarity itself correlates with contemporaneity.

Now, I do not participate in the AWP conferences or have any sustained professional intercourse with writing program administrators and instructors, but I assume they are apprised of the uncritical, unapologetic joy of fandom among students, and the collateral disinterest in originality, and find it old news. Perhaps they forbid fandom writings, something that I will do if I teach creative writing again. Although the initial shock I felt over witnessing the *preference for familiarity* has diminished, I still find it appalling enough to dissuade me from teaching creative writing again should the opportunity arise. I should have foreseen it in the spectacular rise in plagiarism cases and the whimsical (yet wary) attitude about this expressed by students in other English courses. In creative writing today, mimesis assumes a normative status, that of a tacitly accepted precondition for writing almost anything at all. The ghosts of the Romantic movement have long stopped haunting creative writing workshops. When I remarked to a colleague about the frequency of fandom writing in my workshop, he said, "They're having fun, aren't they? Give them a break; where else can they write that sort of stuff?" It is likely that few instructors complain too loudly about fanfiction, at least in public, since creative writing is their bread-and-butter and the only area of enrollment growth in English departments. Besides, there are already scholarly books being published that argue the virtues of fandom for young writers, who gain support for their nascent fanfiction through the networked communities of fans who share their interests.[22] In short, any practice that drifts into social media as its base of operations is justified and academically worthwhile.

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It is needless to say that fandom, which occurred in different forms long before the internet, is not the only explanation for the decline in originality.[23] Even among my literature majors who think of themselves as critics and teachers, as *essay* writers, not creative writers, it is arguable that so many messages and tweets are exchanged on social media apps, so many ideas and opinions are shared on an hourly basis as students read and write, that originality, as *individuated consciousness*, does not get enough time or energy to evolve in a sustainable manner. To repeat Stiegler's point, constant social networking produces "a herd effect...that is highly mimetic." The underlying issue here is psychosocial resistance to subjective individuation, a reluctance to personally individuate oneself in language as a form of discovery. This reluctance inverts the goal of the Romantic movement as discussed earlier. But let me stick to the problem of literary originality for now. I am presupposing for the genesis of originality a certain incubation phase requiring time and focused attention in relative isolation from one's peers—something like privacy, or intimacy, even secrecy, God forbid. There is nothing mystical here, although I am not opposed to associating intense lucubration with monastic activity, with meditation, as does Ivan Ilych.[24] I merely assume that the encounter a student writer has with sources, with ideas and texts, with favorite authors, whether creative or scholarly, requires a certain rigor of attention and personal engagement to ensure a distinctive--perhaps original--outcome. This encounter, sustained by nocturnal patience and persistence like prayer, like séance, is precarious and hence cannot endure repeated interruptions and progress reports (updates) via tweeting and texting.

I do not see student writing coming from quasi-monastic conditions of cognitive and emotional intensity and solitude. Instead, it is increasingly the case that there is something like a convergence of

thinking and linguistic facility among classmates, producing common themes and problems phrased in writing styles and diction that are drawn from recognizable sources. The outcome of all this sharing, as I remarked above, is essays and stories that are more or less familiar to everyone, that do not pose the hermeneutic challenges categorized by George Steiner in terms of the *modes of difficulty* that characterize literary writing: contingent, modal, tactical, and ontological difficulties. There is no need to explain these modes in depth, as does Steiner, because all of them are unwelcome in the eyes of students.[25] Take contingent difficulties—words and foreign expressions that a reader must look up in a dictionary before proceeding with a story. The once popular E. A. Poe, who we know loved to sprinkle recondite words and German and French aphorisms in his prose, has largely lost his youthful audience because of his fondness for simulating exotic erudition. This development is counterintuitive; Poe was a skilled mimic, hence should appeal more than ever to young readers! Those baroque mannerisms that used to be tolerated if not savored in Poe's style are now seen as needlessly pretentious. When a student risks using such words and expressions in their own prose, they are inevitably accused of showing off. It follows that if the cliché "style is the man" (or woman) still applies, it means that when fellow students scold a writer for being too difficult and alienating, they are rejecting her romantic *individuation in language*, which represents a betrayal of their cohort, their discourse community. God forbid if the sort of genius so adored by the Romantic movement should appear in a writing workshop, deformities and all. In fact, such writers have appeared… Breece D. J. Pancake killed himself after attending the writing program at the University of Virginia. More recently, David Foster Wallace committed suicide many years after receiving his MFA from the University of Arizona.

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Creative writing students are routinely encouraged by their teachers to read as much as possible. They are told that writers such as Stephen King and Joyce Carol Oates never go anywhere without reading material—paperback or Kindle, it's all good. But the purpose of doing so remains somewhat obscure, at least to students, who, inculcated with the principle of reason, are inclined to impose a functional purpose on reading as one task among others to accomplish by a given deadline. In short, reading is homework. When they read, are they supposed to be looking for something specific? Do writers like King and Oates read to absorb stylistic mannerisms, ideas, and so-called tricks of the trade? Do they read to get fired up about the competition in New York and London? The latter would be true if they only read contemporary writing, but they read dead authors too. Stephen King said that Arthur Machen's *The Great God, Pan*, published in 1894, is "one of the best horror stories ever written. Maybe the best in the English language."[26] The most interesting thing about King's statement is its high valuation of writing from another century. It would be worthwhile for student writers to ponder his words, as many of them express a strong distaste for literature published before their time. As a student said two months ago at the beginning of my course on Advanced Composition, "I've always found [E. A.] Poe slow going and wordy, and don't get why he's so popular." Like Stephen King, Joyce Carol Oates speaks highly of writers who wrote masterpieces in what seems like a bygone era to today's students. Oates says that developing writers shouldn't read anything that happens to be nearby, but classic modernists such as James Joyce, Virginia Woolf, Kafka, and Henry James. She says that one should read such writers with the general goal of enhancing and elevating one's own writing. Her intuitive assumption is that deep and undistracted experiences of reading such authors will eventually improve a beginning writer's style, linguistic resourcefulness, and vocabulary.[27]

It is my impression that accomplished writers do not usually read novels for a specific purpose, but to immerse themselves and get recharged in their favorite linguistic and narrative milieu, much like an electric car gets its batteries recharged to go the distance. Other people enjoy vivid language and imagery from elsewhere, YouTube and Instagram, but writers prefer reading novels and stories. Gaston Bachelard is speaking for many writers when he says, "We take pleasure in a utopia of reading. We are treating literature as an absolute value…For us, a book is always an emergence above everyday life. A book is expressed life and thus is an addition to life."[28] It is arguable that freakishly prolific writers like Joyce Carol Oates and Stephen King write and read because they are intrinsically compelled to do so. They don't need a reason to read; no one tells them to read. They don't have a choice in the matter: when they wake up, at whatever hour, they feel an indeclinable imperative to read and write. Such is their way of being in the world, of inhabiting the milieu in which they have individuated themselves as writers. Writers are not natural born multitaskers; they don't know any other way to be alive, any other way to be themselves—and that's a blessing unless their writing is unpopular and unprofitable, in which case they feel cursed. Since, as Sartre says, we *are what we do*, if writers stop writing and reading, it will only be a matter of time before they cannot tell you *who they are* because they will not be able to *recognize themselves.*

Writers read to steep themselves once again in their natural milieu, just as a fish caught in a stream gasps and gulps to be released back into its waters in accordance with the humane sustainability principle of "catch and release." The difference is that humans, while craving their familiar habitus, benefit from being beyond themselves in a good book. When they read, they are still in their milieu (a literary existence, a lifeworld that values writing and reading) but in unfamiliar terrain. They relish this experience of defamiliarization; they get pleasure from the otherness to which their reading exposes them. Fish, obviously, neither enjoy nor benefit from being cast outside their natural habitat, their biological niche, or ecosphere. From this difference one can infer that human beings have the peculiar capacity to interface with and benefit from other niches, if not temporarily occupy said niches, or sub-universes, which the phenomenologist calls *realms of reach*.

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But are pleasure and refreshment the sole benefits of reading other writers' works, of reaching over into their realms? In a biography of the scientist, Jacques Loeb, the biographer reports that Loeb used to frequently repeat something that the botanist, Julius Von Sachs, said to him: "All originality comes from reading."[29] At first glance, this oracular assertion seems nonsensical. How can the origin of originality be in reading? Is it not truer to say that reading saps or dilutes your originality, that when you spend so much time reading work that is not your own you lose contact with your intuitive "zone"? Nietzsche argued as much, but he mostly did so when passionately enveloped in the composing process, when reading anything else would break his focus and be a disempowering distraction. His own thinking and writing were, in fact, inspired and transformed by his reading of Schopenhauer, Montaigne, R. W. Emerson, Stendhal, and Dostoevsky, to name just a few of the writers that he fervently praises in passages that can be found throughout his writings. Let's consider one such passage that Nietzsche wrote about Montaigne's powerful influence on him: "The joy of living on this earth has been increased by the fact that such a person wrote. At any rate, since my first encounter with this freest, most energetic of spirits, I have found it necessary to say of him, I sprouted another leg or a wing."[30] What is Nietzsche saying? That he was emotionally and intellectually *available* for his encounter with Montaigne's *spirit*; that he had the capacity to be joyfully

affected by reading him; that reading Montaigne abruptly incited development of Nietzsche's own proven and brilliant style through *another style that transforms his own,* a most welcome outgrowth or mutation enriching Nietzsche's repertoire as a writer. To grow a different limb is known in biology, according to Jacques Loeb, as heteromorphosis.[31] The postmodern psychiatrist and philosopher, Felix Guattari, speaks of "machinic heterogenesis" as a supplement to the soul, "where autonomy accommodates diverse mediums of alterity."[32] Both terms, which suggest what Stiegler means by *transindividuation*, point to something like contemporary origins of originality, even in technological devices. These would be generative events which sprout distinctive or uncommon transfigurations within autonomous identity formations.

Nietzsche was, regardless of his posturing as a stubbornly willful and lonely thinker, receptive to the influence of Montaigne and other writers. There was nothing combative about this development which resulted in heterogenesis. Hence one must speak here of Nietzsche's *powerful receptivity* overriding the principle of reason which recoils against alterity. "For Nietzsche," Alphonso Lingis argues in his high-voltage essay, "The Will to Power," "the force, the power of the will, does not come from out of the sovereignty of the ego, the sovereignty of self-consciousness; rather, it comes out of the fact that the Will to Power is fundamentally receptive and continually draws force from the universe, from the dispersed, the distance, the different, and the beyond. It owes its force not to the sovereignty of the self-conscious ego-formation, but to its essentially receptive, affective nature…Thus, affectivity is contained in the Nietzschean concept of the will, and power is measured by feeling rather than by the sovereignty of self-consciousness."[33]

Nietzsche has always been admired and loathed as an incredibly original thinker and stylist. His passionate testimony about Montaigne's influence on his growth as a writer does nothing to alter or weaken that reputation. He does not suffer, as has been said of the writer Sheila Heti, from an "egregious and unusual failing" due to an "utter susceptibility to the ideas and desires of others."[34] Such criticism would in Nietzsche's case entirely overlook the role of *selectivity* in his individuation, and in the hermeneutical focus of the will to power, which seeks to prevail in a conflict of competing interpretations, to impose its original explication and establish sovereignty. He was strong enough to absorb Montaigne and further differentiate and distinguish his own originality in the *unique combination of forces* that resulted from his reading. Hence, we are forced to reconceptualize or at least revise our assumptions about writers and their reading habits. Provided you have a strong conviction about your work, reading other writers does not distract or disempower you, but provides insight into the undeveloped possibilities of your own writing that you had not previously considered. Such is the gift of *otherness*, which further differentiates your writing by compounding its origins, by intensifying its combinatorial power without duplicating its sources. This process illuminates the inner relation between difference and repetition in the creative acts of the will. The return of Montaigne through Nietzsche's reading and subsequent writing does not reproduce Montaigne, but instead produces a *different Nietzsche.*

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When Hans Sachs says, "All originality comes from reading," he has in mind the way scientists read each other's past and present published work so as to (1) become capable of empirically reproducing that work, that experiment, to objectively validate its truth claims, and (2) to ensure that their own work will not blindly produce what has already been achieved, but advance beyond its content

and scope. Such rigorous reading forces transindividuation, or heterogenesis, that is, originality. The complete biographical passage about the brilliant Jacques Loeb, who learns about the value of reading from Hans Sachs, follows below:

> The range of his reading was indeed a continual marvel. Scientific books and periodicals of all kinds were eagerly devoured and with unflagging interest he followed the newer developments in sociology, politics, and *belles lettres*. He could get the gist of an article very quickly and his astonishing memory seemed never to let anything slip. He sometimes quoted a remark of Sachs: "All originality comes from reading," meaning that it is necessary to be familiar with what is known in order to strike out in new directions.[35]

As a scientist or novelist, you read someone else's work and say to yourself, "Well, this is certainly an original contribution to literature; very well, I better continue brainstorming to produce something else, something as yet unwritten." Surely the most embarrassing development that can happen for a scientist is to perform an experiment and declare its originality when the same experiment was done two years ago and published in a journal the scientist never got around to reading. Likewise, with writers. When Stephen King wrote *The Shining*, we can assume that his wide and diverse reading habit had assured him that nothing similar had been published. To be sure, he had read many stories about haunted hotels, disturbed writers, ghosts, murders, alcoholically dysfunctional families, etc., but he connected and recombined them in his head in original ways. It is as if his willpower and artistic imagination were productive behind King's back, combining and collating various reading materials in what Husserl described as passive syntheses.

Norbert Weiner, the eclectic MIT professor who coined the word, "cybernetics," was reading by age four, and an avid reader by age seven when he absorbed the works of Dickens, R. L. Stevenson, and others. In his youth, Weiner was not troubled by difficult books that seemed too complex for his reading level. In the following passage from his autobiography, Weiner describes the kind of active reading that welcomes difficulty, and whose long-term learning outcome produces original scholarship:

> Probably much of my early reading was over my head at the time. It is not essential for the value of education that every idea be understood at the time of its accession. Any person with a genuine intellectual interest and a wealth of intellectual content acquires much that he only gradually comes to understand fully in the light of its correlation with other related ideas. The person who must have the explicit connection of his ideas fed to him by his teacher is lacking in the most vital characteristic that belongs to the scholar. Scholarship is a progressive process, and it is the *art of so connecting and recombining individual items of learning by the forces of one's whole character and experience* that nothing is left in isolation, and each idea becomes a commentary on many others.[36] [emphasis added]

This remarkable passage has implications for both teachers and writers. Weiner reminds teachers that from the viewpoint of long-term learning outcomes, difficulty is not to be avoided. Even if

short-term comprehension dithers behind the object of study, it will eventually catch up with itself and its object, with far more cognitive traction, depth, and maturity than if the learner is coddled with simplistic materials. This pedagogical approach *embracing difficulty* contravenes the system-wide practice of infantilizing students whose teachers, required to file assessment reports based on short-term learning outcomes, teach reading materials on a par or below the student literacy level. As for scholars and writers, it is noteworthy that Weiner's observation about the *art of connecting and recombining* objects of learning appears to attribute a more active role to reading than the receptivity integral to Nietzsche's heterogenesis after reading Montaigne. But this was described as a powerful receptivity! Ultimately, Nietzsche would concur with Weiner when the latter emphasizes the individual impetus and participation of *one's whole character and experience* in the final outcome. The difference is that Nietzsche's experience transfigures him intimately, even traumatically, producing a highly idiosyncratic learning outcome; whereas Weiner, who speaks for scholarship as much as for himself, suggests a sort of grand synthesis as a learning outcome in which disparate materials are integrated.

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The writings of the contemporary poet and scholar, Susan Howe, exemplify the recombinational nature of originality as previously discussed in these pages. However, this is not merely the remix artistry practiced today. Howe's close study of archival materials is a precondition of her strikingly original creative productivity. She spends much of her time in old history books and the margins of writers like Melville and Emily Dickinson, only to suddenly break into poetry or poetic prose. Howe hovers with wonder over the scribbling Melville did in the margins of Shakespeare and wonders how this affected the composition of *Moby-Dick*. One of her poetic methods, based in exegesis, is to graft her personal interpretations of historical personages into a literary framework or continuum that encompasses the past and the present. This is what Susan Howe does with Hester Johnson, aka Stella, the companion of Jonathan

Swift, in her hybrid and innovative work, *The Liberties*. In an essay titled "Portrait" Howe fills us in on the biographical lore about Stella in factual detail. She speculates, bemused, over the unknown aspects of this fascinating woman. Then she writes a patently experimental poem, "Book of Stella."[37] Howe's creative writing is, in Gadamer's terms, an inspired "fusion of horizons," that of a contemporary poetic sensibility which reawakens the salience of historical personages and narratives and reinvigorates their relevance through "effective historical consciousness."[38] The poetic document she produces out of this effective historical consciousness is an event of heterogenesis, a sprouting of something different than its sources, something original.

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Individual writers who have the courage to think for themselves and cherish their autonomous powers of self-understanding and creative discovery are becoming increasingly rare due to commercially deployed, digitized attention capture techniques, and socially mediated cognitive convergence. Most writers can grasp that their attention is constantly being solicited and captivated by commercial forces on the web, but, as with data mining of their personal information, the sticky commercialism that seeks to capture their available brain time is typically perceived as a nuisance endemic to the attention economy that doesn't seem worth complaining about. As for cognitive convergence, i.e., the homogenization of thought that occurs from constant sharing of one's thoughts

and opinions, the joys of belonging to social media anesthetize users from its pernicious conse-quences. The sapping or dissolution of one's originality and indigenous traits is not felt as a loss or theft; the victims of digitized predatory forces do not feel like the prey of a vampire who awakens in the morning feeling wan and light-headed. Nor do they feel that fandom, writing fanfiction, or using emoticons and tweets degrades their communicative practices. Technology makes it all enjoyable—the loss of freedom, even the death of originality. Imitation is enjoyable and less socially alienating than originality. Sociality is both a means and a telos: the purpose of studying is to be with friends, the goal of writing and creative expression is collegial attention and feedback. In such a convivial milieu, outbreaks of originality among peers are deemed profane and inscrutable. The old catch-phrase, "The nail that protrudes gets hammered down," epitomizes the ethos of social media.

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All such developments of digital culture are difficult to isolate and describe, to raise to conscious awareness, mainly because of the way people are now naturally embedded in social media as a life-world structure and practice. In other words, the use of social media as a structure of the lifeworld has become naturalized through practice, through daily usage; there is a *natural attitude* associated with members of social media platforms insofar as their activities go "without saying" or unques-tioned. Hence it would never occur to them to ask the following questions of their digital habits and addictions: does social media transform my cognitive style and usurp or neutralize my powers of individuation, and hence, originality, and if so, what are the existential consequences, and how does all this impact my writing? The Russian theorist Viktor Shklovsky, who coined the term *Ostranie* to describe the defamiliarizing power of great literature, already anticipated in the 1920s a future ca-tastrophe for literary discourse when he described what he called the "algebraic method of think-ing…the process of automatization that explains the laws of prose speech with its fragmentary phrases and half-articulated words."[39] He cleverly foresaw the economizing of linguistic practice in conformity to the technological automatisms (which today we call algorithms) of science-based cul-ture. Such a culture, which fully actualizes Leibniz's *principle of reason* in its intolerance for literary ambiguity, abbreviates and standardizes nuanced communication into oblivion. The Russians of Shklovsky's era relinquish the responsibility of meaningful expression and employ Marxist catch-phrases and slogans. What would he have to say about emoticons and tweets! Shklovsky knew that what deforms language, deforms everything it envelops in the human lifeworld. He concludes: "And so, held accountable for nothing, life fades into nothingness. Automatization eats away at things, at clothes, at furniture, at our wives, and at our fear of war" (5). But who reads Victor Shklovsky to-day?

NOTES

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[16] See Felix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: The Athlone Press, 2000). For Heidegger's concept of the enframing of Being, see *The Question Concerning Technology*, trans. William Lovitt (New York: Harper & Row, 1977), pp. 43–45.

[17] Bernard Stiegler, *Automatic Society*, p. 42.

[18] Bernard Stiegler, *Automatic Society*, p. 36.

[19] Jean Baudrillard, *Impossible Exchange*, trans. Chris Turner (London: Verso Books, 2001), p. 63.

[20] Jean Baudrillard, *Impossible Exchange,* p. 70.

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51.

[34] See David Haglund's review of Sheila Heti's novel *How Should a Person Be* (NY Times Online, July 5, 2012): https: //www.nytimes.com/2012/07/08/books/review/how-should-a-person-be-by-sheila-heti.html. Retrieved 14 January 2020.

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[36] Norbert Weiner, *Ex-Prodigy: My Childhood and Youth* (Cambridge, MA: MIT Press, 1953), 65–66.

[37] See Susan Howe, *The Liberties*, included in her *Europe of Trusts* (Los Angeles: Sun and Moon Classics, 1990), 149– 217.

[38] Chris Lawn and Niall Keane, *The Gadamer Dictionary* (London: Continuum Books, 2011), pp. 51, 79.

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END

Section Three

Book Reviews

Caroline Criado Perez. Invisible Women: Data Bias in a World Designed for Men. Abrams Press, 2019. 411 pp., $27.00 (Hardback).

Reviewed by Paulette M. Coulter

Unless one looks carefully at the paper jacket of Caroline Criado Perez's *Invisible Women*, one does not see the women there at all, just as one does often not see the women at work in the world. As the same book jacket end flap describes, Criado Perez is "a writer, broadcaster, and feminist activist"; she holds a degree in English language and literature earned at the University of Oxford; and she has studied "behavioral and feminist economics at the London School of Economics" (ibid.). While the title of the book hints to the reader that she is a feminist, it does not as readily reveal the emphasis on economic data (or its absence) the writer presents.

The book comprises six parts, along with a preface, introduction, afterword, acknowledgments, endnotes, and index. Part I focuses on daily life (two chapters); Part II, on "The Workplace" (four chapters); and Part III, on the design of the world designed by and for men (three chapters). Part IV examines the medical treatment of women (two chapters), and Part V, "Public Life." Part VI looks at when the design "Goes Wrong." Criado Perez's particular focus throughout is on the disparity between data collected on men and women in all spheres of life. This focus is aptly summarized in the single-sentence preface, quoted from *The Second Sex*: " 'Representation of the world, like the world itself, is the work of men; they describe it from their own point of view, which they confuse with the absolute truth.' Simone de Beauvoir" (qtd in Perez, p. ix).

Criado Perez argues that much of the data, information, and knowledge of humans collected throughout human history is data, information, and knowledge of *male* humans, which she identifies as the gender data gap. She also explicitly argues that "the gender data gap is both a cause and a consequence of the type of unthinking that conceives of humanity almost exclusively male" and that "the dangers of being relegated to, at best, a sub-type of men, are [now] as real as they have ever been" (p. xv). Criado Perez draws upon data from the fields of architecture, transportation, urban planning, employment, education, medicine, government, economics, technology, human rights, and disaster relief, to name only a sampling. She draws supporting information from print and electronic sources worldwide, often providing only a web address, and lists the sources in her 1,331 endnotes (pp. 322–391).

Invisible Women, is, thus, a data-driven book. The reader may note three or four citations in a single sentence, and sometimes the text is very dense. Because Criado Perez is both a feminist and an activist, one might assume that the work is tendentious or totally polemical. It is not. In fact, her occasional feminist/activist comments almost provide comic relief to the starkness of the data she presents. The author acknowledges counterarguments to her ideas throughout the book, as she does in her discussion of joint filing of income taxes in the United States (U. S.) (p. 259).

Because the book is packed with information, it is difficult to select only several points for discussion. A few of the most striking this reviewer found are addressed here.

In terms of work, "[g]lobally, 79% of the unpaid work is done by women," according to the McKinsey Global Institute in 2015 (qtd in Perez, p. 70; endnote Chapter 3, number 7, p. 335). Criado Perez states, "There is no such thing as a woman who doesn't work. There is only a woman who isn't paid for her work" (p. 70). In Iceland on 24 October 1975 women took the day off to demonstrate this by doing neither paid nor unpaid work; it was a trying day for the rest of the population (p. 69). Much of the information cited by Criado Perez refers to the U. S. and other world countries. Guam and the rest of the Pacific region are not mentioned specifically. Guam's political scene currently differs from much of the world in female representation.

Unfortunately, as the #MeToo movement has demonstrated, the workplace for women is not always safe, and invisible (as well as visible) discrimination takes place. While most spaces, including automobiles, are designed for the default male, so too are salaries, the routes to work (design of urban settings and road and highway systems) and transportation schedules, increasing the time it takes for women to deliver children to school and medical appointments as well as to shop for food and clothing both before and after work, in a process Criado Perez calls tripchaining: "a travel pattern of several small interconnected trips that has been observed in women around the world" (p. 30). Major cities have bus routes and highways, for example, that deliver men quickly and directly to their places of work, but rarely are these the same routes that a woman must use to deliver her children to school, to a clinic, or even to a place to play or to purchase groceries.

In the media, as in other public areas of life, women, though constituting more than 50% of the population, are represented less than men: on TV, non-human female characters are only 13% of those represented while human female characters are 32% of those represented (p. 10). Similarly, as indicated by the 2015 Global Media Monitoring Project report, "women make up only 24% of the persons heard, read about or seen in newspaper, television and radio news, exactly as they did in 2010" (qtd in Perez, p. 11). Another area where the invisibility of women can be seen is in our wallets (pun intended). What currency in the U.S., for example, bears a female countenance? The production of the Susan B. Anthony dollar, minted in 1979-1981 and in 1999, was stopped, Wikipedia notes, "due to poor public acceptance." The British at least have their Queen on currency.

In music, worldwide, as in literature and other media, women are largely excluded from the canon (Perez, pp. 18– 19). The underlying forces of bias may be those articulated by Ursula K. Le Guin, who wrote, "I'm aware of four common techniques or devices (often, though not always, employed quite unconsciously) for excluding women's fiction from the literary canon book by book, author by author. These devices are denigration, omission, exception, and disappearance. Their cumulative effect is the continuing marginalisation of women's writing" (pp. 88–89). It is easy to disparage a woman musician, writer, politician, because most of the media, at least in the recent past, have not risen to defend such a woman. Thus, such women are omitted from the media (Perez, pp. 18–19), if they are particularly talented or hard working, they are considered an exception to half the human race, and their work(s) are not incorporated into the respective canons. Nevertheless, when music

auditions are truly gender blind, with the judges not being able to see the performer, women performers are more nearly equally selected (pp. 92–93).

A similar process is at work in education, despite supposedly meritocratic criteria, often designed for specific male behaviors (pp. 98-103). Once this reviewer found in her social media a report with a title somewhat like this: "Want a good teaching evaluation? Be a male!" Studies of student bias for male teachers, especially in post-secondary education, abound on the Internet; all one has to do to find them is type in that quotation. In a recent search, the first ten hits covered the years 2010 through 2019.

 While it is evident that the bodies of women differ from those of men and children, this evidence does not carry over to the design of automobiles, safety clothing, or medical care. The young art student learns early in figure drawing that the proportions of male, female, and child bodies differ. Yet, even though a female crash dummy has been designed, automobiles are crash-tested only with male dummies and with dummies scaled down in size for women and children, which may have fatal consequences (pp. 185–191). While this situation is bad for all women, it poses particular difficulty for pregnant women. Safety equipment for police, fire, and military personnel has been designed only for the male body, with negative consequences for females in these professions (pp. 122–127). A safety vest that does not adequately cover a female torso does not protect her life (p. 127). Pants, helmets, and coats that are oversized or not shaped for the female body can be more a hindrance than a protection. In medical care, although most drugs have been tested on males or on groups that were not sex-disaggregated, the fact is that drugs do not necessarily affect female bodies the same way they affect male bodies. This disparity is not taken into consideration in drug administration or in the training of medical students (pp. 198–205). For a long time, for example, a heart attack was considered a male experience, because that was where medical research focused; women's experience of heart attack, we now know, differs. Because data are not disaggregated by gender, little is known about the effect of many drugs on female bodies (pp. 214–215).

One might think that the U.S. Social Security system and taxation system would be gender fair; this is not the case. In the first place, the Social Security system was designed for men in industry. At its origin, women were not even considered except as survivors of male workers. Currently, most married couple files income taxes jointly (p. 258). In an example Criado Perez offers, the husband/" breadwinner" makes $60K per year, and the wife, who probably works only part time because of household responsibilities, makes $20K (p. 259). Because the U.S. tax system is graduated, the base of the income is taxed at a lower rate than any amount added on at the top. Thus, "the person earning $20,000 will be taxed on that income as if it is the final $20,000 of an $80,000 salary, rather than all she earns. That is, she will pay a much higher rate of tax on that income than if she filed independently of her higherearning husband" (bid.). To most of us, that information is not visible. While the *couple's* tax rate may seem lower, that does not mean the tax refund is shared out to the woman at the rate she should have been paid.

Similarly, invisible are many married women in the taxation systems of the UK and of Japan. The Marriage Allowance in the UK, according to Criado Perez, gives the male wage earner two advantages by giving "a tax break where the lower earner is on £11,500 or less" (p. 260). This practice

increases the gender wage gap by "supplementing male income, while also creating a perverse incentive for women to work fewer paid hours" (ibid.). A similar practice occurs in Japan (ibid.). The curtailment of women's paid hours to keep the tax break means that fewer women participate fully as earners in their national economies, men receive a higher tax rebate than women, and, essentially, the countries do not gain maximum revenues (p. 246). Women are kept effectively in a weaker economic position, and even that information is rarely visible because tax information is not disaggregated by gender.

One area in which data are sex disaggregated is in family violence. Women experience family violence more than men, and some areas of the Pacific have very high rates of violence against women, such as the statistic from Papua New Guinea, where two out of three women are victims of violence (I'm Moshanty. Do you love me?; Our, 2016). Statistics for sexual assault/violence are also high in India, where "Delhi was ranked the fourth most dangerous public transport system in the world for women" (p. 61); so, women must fear violence in public places as well as in their homes. Violence is predominantly a male approach to things, including women and children: "A 2013 UN homicide survey found that 96% of homicide perpetrators worldwide are male" (Perez, p. 2). The worldwide scope of this statistic is frightening.

Two of the most discouraging items (for this reviewer) discussed by Criado Perez regarding disaggregation of data were related to shelters and camps established after disasters (natural or manmade) and to obtaining grants for research that disaggregates gender data. The first item identifies the hazards to women in refugee camps and shelters (pp. 296–309). In these situations, toilet facilities are usually placed at the outer rim of a settlement. Traveling to the facilities poses a physical safety hazard to women and children, especially those who attempt to use the facilities alone. Often the men appointed to protect women are victimizers themselves (p. 304), and often, too, the women are in shelters because they have left situations of violence against them (p. 296; p. 306).

With respect to obtaining grants for research that disaggregates gender data, many grants are made based on preexisting data. Since few existing data are disaggregated, grants are denied because "No data exists" to support the proposed research of gathering information on women because women's issues are not a matter of public concern (p. 231, for example): an optimal catch 22! Criado Perez calls for a drastic change––a revolution––in research and data collection, which so far worldwide, has failed to consider half the human race.

In her Afterword, Criado Perez delineates four themes of her book: the female body, sexual violence against that body, women's unpaid work (especially care work) (p. 315), and the excuses why nothing has changed, especially "that women are just too complicated to measure" (p. 316). In developing these themes, she focuses on the intersectionality of issues of politics, government, industry, technology, medicine, and education, how they affect women's lives, and how collecting gender-disaggregated data has shown or could show us how to close the gender data gap.

Finally, then, with data drawn primarily––at least as mentioned here––from major Western societies, what does the book *Invisible Women* offer to Micronesia and to the educator in Micronesia? In

the first place, the author and the book reveal the need for education to render both genders equally visible no matter where one is in the world. This may be a book that should be required in the critical thinking and Women and Gender classes at the higher education levels because it helps question the underpinnings of numerous social and economic practices and takes into consideration what women do to keep society functioning. This book could also be used as a source for defining local and regional research to increase the availability of sex-disaggregated data for the region. While Guam currently has a female governor and several female senators, it will be interesting to see if that pattern carries into the future or whether there will be a male backlash.

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Beyond Distances: Governance, Politics and Deportation in the Mariana Islands from 1870 to 1877 by Carlos Madrid. Northern Mariana Islands Council for Humanities, 2006.

Reviewed by Perry J. C. Pangelinan, University of Guam

Usually book reviews focus on a recent or contemporary work. However, it is worthwhile to return to certain classics to refresh our memories regarding their cultural significance. In the book denoted above, which for reasons of brevity we will title *Beyond Distances,* Carlos Madrid furnishes a thorough account of the many exile occurrences that took place in the Marianas and in Spain during the nineteenth century. Madrid's succinct recapitulation of the state of affairs in Spain calibrates an accurate timeline for the exile of hundreds of political prisoners throughout the Mariana Islands.

The content of *Beyond Distances* consists of an acknowledgments page, a forward by Scott Russell, a preface, an introduction, seven chapters, appendices, bibliography, and index.

In the introduction the author delves into various aspects of life in and administration of the Mariana Islands. Additionally, Madrid briefly addresses the historical background and political changes of Spain that took place in the Nineteenth century. Further, the introduction concludes with the 1868 Revolution, in which the author describes that "tensions increasingly becoming evident were threatening Spain with political and social fracture" and overseas representation in parliament highlighting that "on the basis of the record of the parliamentary commission of 1837, it can be said that the people of the Marianas were the first in the Pacific for whom democratic representation was explicitly considered" (p. 25).

The seven major chapters of *Beyond Distances* provide details regarding the governance, politics, and deportation in the Mariana Islands in the nineteenth century. Each of the chapters discuss at least one or two years between 1870 and 1877.

In Chapter One, Madrid discusses accounts of 1870 such as the abuses of Governor Francisco Moscoso, the deportation of eleven prisoners to the Marianas for the Pamplona uprising, the large-scale reconstruction in Saipan that had to be done as a result of a typhoon two years earlier. The chapter concludes with the end of the Moscoso Administration on August 17, 1871.

Chapter Two covers the period between 1871-1872 discussing events beginning with a new king of Spain, Amadeo I, that was celebrated on Guam. In addition to this, a new Governor, Luis de Ibanex y Garcia took place. Fighting and investigating corruption of Spanish officials and other government employees were among the first order of business by the newly appointed governor so as to improve administration in Guam. In addition to these events, Chapter 2 also touches on the events of the relocation of 626 inhabitants of Rota to Umatac, on Guam, because that island was destroyed by a typhoon. An interesting account happened on August 19, 1872: a shipwreck of the *Maria del Rosario* at Tinian took place as a result of a typhoon.

In Chapters Three through Five, there are detailed accounts of events that took place between 1873-1875. The author considers noteworthy events such as the rebellion in Alcoy; a change of command in the Marianas; the Escape of Regidor and Mauricio; various mass deportations that happened on August 1874, January 1875 and February 1875; crises of disease and illness, both physical and mental, on Saipan and Guam as a result of poor conditions of hygiene or the inability of

preserve food rations. Chapter Five ends with descriptions of various acts of violence in Garapan, Saipan and Agana, on Guam, due to a number of reasons such as a lack of food in the islands.

In Chapter Six, Madrid describes events between 1876-1877, such as the drought and other desperate conditions in Saipan; the violent typhoon in 1876; the end of mass deportation decreed in January 1877; and the deportees return home to Spain.

 Finally, in Chapter 7, the author closes the book on issues like the official assessment of the mass deportations, and the confrontation by the people of the Marianas with the colonial command. The circumstances of 1870-1877 detailed by the author help illuminate the sociopolitical framework of the publication. Hattori describes the piece, "*Beyond Distances,* provides insights of everyday life in 19th century Marian Islands and makes superb use of rare documents to bring out native Chamorro voices and perspectives. By skillfully interrelating significant history events and Spain and Europe with the territories in the Philippines and Micronesia, the book facilitates a keen understanding of local events within relevant global contexts. In doing so, this work effectively disrupts common notions of Micronesia as isolated and unaffected by events in the rest of the world" (Hattori, 2006).

The author's research in putting this publication together was impressively comprehensive. To obtain the resources of archival documents for this piece, the author spent considerable time in research institutions such as Archivo General Militar de Madrid, Archivo General Miltar de Segovia, Archivo Historico Nacional, Madrid, Library of Congress, Washington D. C., Micronesia Area Research Center (MARC), Guam, and Philippine National Archives, Manila. At these institutions, the author accessed both primary and secondary resources to verify the events surrounding the governance, politics and deportation of the Mariana Islands in the nineteenth century. At the end of each of the seven chapters, Madrid includes *notes* to support the claims and events of each chapter.

In addition, the author provides tables and charts to give the reader a better understanding of some of the accounts that are highlighted. These are found within the appendices of the book. These appendices include: "Letter from Rota" written in Chamorro, June 1872; "Documents on the Escape of Antonio Maria Regidor and Balvino Mauricio," March 1874; "Record of Names of deportees on the steamship Panay," August 1874; "Statistics of food rations sent from the Philippines for the Spanish deportees in the Marianas between 1874 and 1876"; "Spanish deportees who departed the Marianas on the *Manuel* in September 1876"; "Spanish deportees present in the Marianas as of June 28, 1877, and who departed on the steamship *Victoria*"; "Statement of Deportees who have died in the these Islands," June 28, 1877. Furthermore, the author uses historical photographs in the chapters that gives the reader a better visual of certain accounts or individuals being discussed.

Overall, *Beyond Distances: Governance, Politics and Deportation in the Mariana Islands from 1870 to 1877* is an excellent publication. Local, regional, national, and international students, researchers, and scholars will greatly benefit from this publication. Thus, research and library institutions throughout the world should certainly have at least one copy of the book on their shelves for reference and easy access. Readers will gain insights and a deeper understanding of life in the Mariana Islands of the nineteenth century.

Savage Gods, by Paul Kingsnorth. Columbus, Ohio: Two Dollar Radio, 2019; 126 pages; $14.99 (paper).

Reviewed by C. S. SCHREINER, University of Guam

Spencer Ruchti, an employee of the Harvard Bookstore, wrote a reviewer's blurb on the back cover of *Savage Gods* that describes it as a "lovely book, full of wisdom." That's an incomparable bookstore, my favorite, and I want to concur with Mr. Ruchti, with whom I am unacquainted; but his observation, while true enough within its limited scope, neglects to mention the anguish and self-doubt expressed on many pages by the author, Paul Kingsnorth, as will be shown in a moment. This is indeed a wisdom-packed-in-your-palm, artisanal paperback published in Columbus, Ohio, printed in Canada, that the critical reviewer *wants* to appreciate, indeed feels ethically bound to appreciate given that the author is a respected environmentalist and the book itself constructed of "100% post-consumer fiber," and "manufactured using renewable energy." The only detail that arguably detracts from the look and feel of a handcrafted artifact is the photo of the author, Kingsnorth, which measures 2" x 2" on the inside sleeve of a book jacket which measures 5.5 x 7.5 inches. While the black-and-white pic reflects the modest carbon footprint we expect from a small press, and Kingsnorth's visage resembles an alert or "woke" middle-aged sea captain from the era of whaling ships, the photo itself is a concession to the visual culture of the publishing world (mostly owned by film conglomerates), that integrates the appearance of authors in a book's textuality for added value. This aesthetic component helps "monetize" the book, boosting sales, especially if the author is attractive. A small budget operation like Two Dollar Radio can hardly be blamed for this design feature; even in major elections, research has shown that votes are cast in favor of the better-look-ing candidate. Do any books *not* contain the author's photo? Well, yes; look here, a casual peek at what lies in front of me on the shelf: Tolstoy's *Resurrection*, Conrad's *Victory*, Doris Lessing's *Memoirs of a Survivor*, Thomas Bernhard's *Gargoyles*, Levinas's *Existence and Existents*, and Karen Blixen's *Seven Gothic Tales*. With these masterpieces, all you get is text. Okay, let's check an environmental classic. My copy of Thoreau's *The Main Woods* is without an authorial photo: the text is all you get. Given the hegemony of visual culture, it becomes a sort of badge of distinction, a salute to the integrity of pure verbal artistry and speculative achievement, when certain remarkable books do not display the author's photograph.

 Perhaps all this commentary about a book's design seems a distraction from the existential core of *Savage Gods*, which compels the reader to cross the abyss that abruptly yawns open in one writer's existence. This is a book about the writer, Kingsnorth, and his writing life, which is ambushed by a cloud of unknowing, of nothingness in Sartre's sense, after he and his family move to Ireland to homestead a two-acre parcel of land. Before the move, he published several experimental novels (*The Wake,* 2015; *Beast,* 2017); the environmental classic, *Confessions of a Recovering Environmentalist* (2017); and an intriguing first-hand account of the anti-globalization movement, *One No, Many Yeses* (2004). Kingsnorth's writings are also associated with the Dark Mountain project.[1] Such former productivity makes the unwinding he experiences in Ireland insufferable. To speak of a "midlife crisis" in his writing career, when he seems to run out of creative fuel, reduces his painfully documented struggles to a trite catchphrase. Nor can his predicament be described as writer's block. "There was something missing; some energy. It wasn't writer's block, because I could still write—here I am, writing. So, what was it? What was happening here?" (p. 26). The adventuresome persona he crafted for himself in previous writings, and the eventful, critically engaged life those

writings brought to the writer and his family, give way to a more domestic milieu that feels not unsettling but settled, not uninspiring but *beyond writing*. Hence, he begins his book with the sentence, "Writers are lost people." I would modify his statement in the spirit of Virginia Woolf as follows: "Writers are lost people when they are between projects." The sort of torment and depression experienced by Woolf triggered her suicide, and that grim topic is not shirked by Kingsnorth. The book under review emerges episodically, in bursts and throes, at great cost to Kingsnorth's psychic stability. A successful career as a writer, as it turns out, is not the only spiritual goal that has beckoned him. Kingsnorth has always also envisioned owning his own land and making a go of it as both a family man and self-sustaining poetic environmentalist. And when he is finally within reach of that penultimate goal, bestride his own property, tilling the land, growing produce, becoming intimate with the soil and weather, the local wildlife and civic community in Ireland, he finds himself steeped in existential perplexity regarding his place in the world and what to say about it. He says he can write, but not meaningfully.

As readers we gradually comprehend that Kingsnorth's "limit situation" in Jaspers' sense, his "shipwreck" in Blumenberg's sense, his abyssal interval of verbal inconsequentiality and alienation, *provides the topic for his book, is the condition for its possibility*, which is metaphysical struggle; and that it is something like a trial to which the Savage Gods are submitting him within the volcanic forge of artistic invention. The old cliché that says if you can't write a book, then write about not being able to write, rings true in these pages, although it hardly sums up Kingsnorth's challenges. He must survive the abyss and emerge meaningfully productive. His organic sense of "place" has hitherto been integral with, and subtended, his writing projects; but at his new homestead, a breach or disjunction emerges that alienates his writing even as he continues to work and inhabit the land he has purchased. It is as if he can dwell there, for sure, but not "poetically dwell" in the Heideggerian sense. As he stands on his land and looks to the horizon, Kingsnorth wonders: why continue writing if I have nothing to say? Invoking the opening lines of Dante's *Inferno*, he describes himself as follows:

> I think I have walked into some wood, and lost sight of my words in the dimness. I thought I knew what words were for and how to use them. But I thought I knew a lot of things and suddenly, now, in the last year perhaps, none of them seem to matter at all. Where did my strong political views go? I used to know how the world ought to work. I used to know what I wanted to say, to think, to write. Now I don't know why I would ever have thought that. I used to know that living on a smallholding with my family would be the end of a journey, a contentment. I used to think, or pretend to think, that a racing, restless soul could be stilled by grass and trees and the daily work of being. But whatever pushes my words out into the world is not still or calm. That small animal never sleeps, and it never will. And I am tired from wrestling with it for so long. I am so tired now. (p. 43)

The author is troubled by his lack of spiritual intensity, an ebbing *élan vital*; he is frustrated that his writerly intensity is not cooperating with his new homesteading project. The effort of working the land has absorbed his vitality. One of the things Kingsnorth comes to realize, and spells out in existentially visceral prose, is that he has always moved about for the sake of his writing, complying with the obscure promptings of his Savage Gods, the vistas and mirages they conjure; and he has been blessedly fortunate to have thus far established a homeostasis between his destinations and

his writing. Or at least this seemed to be the case. The two ontological vectors, place and prose, have previously collaborated in an eloquent and workable dialectical synthesis. Here is where attribution gets complicated. Was it the place that functioned as a primal force to render his existence a writer's success story, or was it the writing? Well, both; the atmospheric and terrestrial convictions he felt in the different places he lived, and the impetus of his writing, reciprocally supported each other, producing clarity of self-understanding and a good life. But as Kingsnorth digs in and packs and unpacks this metaphysical aporia, he sees that balance might have been something of a phantasm all along, that the intense and disruptive demands of becoming a writer are only temporarily quelled or satiated through the completion of projects, to eventually recur in all their selfish and domineering sovereignty someplace up ahead—as they do in Ireland just when the poor man hoped to establish a sustainable if not permanent homestead.

The outcome of all this troubled reflection is something less stated than metaphorically suggested: the sustainability of a writer's existence will always be vulnerable to the decrees and whims of Savage Gods. One can realistically speak of ecological sustainability in the narrow sense of land use and preservation, natural resource protection, and animal husbandry, but as soon as one complicates this model by enfolding it within the "three ecologies" conceptualized by Guattari, that is, human subjectivity, social relations, and the environment,[2] all bets are off regarding predictable sustainability. Writing is inherently unstable and destabilizing. Because establishing oneself as a writer, in terms of self-determination, is never a finished, or conquered, but an ongoing challenge in which subjectivity, social relations, and environment overlap to test one's resolve, producing myriad pressures, duties, obligations, and questions.

At the risk of uttering a commonplace, it is both a blessing and a curse to conceive of oneself as a writer, but more a curse than a blessing if one is a family man tilling the soil and gathering eggs, as Melville and Frost discovered to their chagrin. Kingsnorth can't escape himself, the writer, or, what amounts to the same thing, the destiny he has envisioned for himself structured by the *imperative to write*. He has always *escaped places* to comply with this imperative force which *forbids him from escaping himself*. But this place he has in Ireland is different than the other places; it represents "home" and finality in a way the other places did not. The allure of escape has met its ultimate negation. Levinas says, "Escaping is the quest for the marvelous, which is liable to break up the somnolence of our bourgeois existence."[3] The earthbound condition of property ownership that Kingsnorth has established in Ireland *resists being broken up* by denying him the freedom to escape. The sedentary comforts of settling into a real home have the power, he has discovered, to annul or mollify the writer's imperative, to silence it, the land in complicity with the silencing, enabling Kingsnorth to *finally escape himself*, his imperative, the one decreed by Savage Gods. Before Ireland, there was enough of an edge to his circumstances, a certain density of contingencies, as it were, to keep him from shirking his destiny as a writer. But not now. The allure of escape has been grounded. And he must reconcile this outcome, yet somehow keep writing without falling prey to a tragic sense of life.

 The book in my hand proves that Kingsnorth overcame the supreme challenge to his creative spirit, the *nostoi* or homecoming. As he says, for Odysseus, all the hard work began when he finally found his way home, becoming one of the rare role models for midlife men. I found this point personally revelatory, that is, when Kingsnorth deromaticizes the experience of rural homesteading and the vain attempt to establish some sort of lost indigeneity. While living on Guam, I have often dreamed of homesteading in Vermont, where I used to own an old farmhouse on twelve acres in the

Champlain Valley. Kingsnorth has certainly injected an ample dose of reality into that fantasy. But in accomplishing his mission, in writing a new book, it is my impression that Kingsnorth said what he *had to say* by a point just shy of the first half. He got to it, he got it done by page seventy-four. After that, *Savage Gods* becomes more explicitly biographical and self-mythologizing. The focus slips from the metaphysical problem to the problem solver; the writing becomes less humble and melancholy, and more self-congratulatory. Kingsnorth weaves the Loki myths and Buddhism into his story about himself; he recurrently reminds us and himself that he is an accomplished writer, but his book does this on its own, making self-flattery superfluous.

It was previously suggested in this review that Paul Kingsnorth looks like a sea captain from the 19th-century. One is reminded of Melville's John Marr: "With an honest stillness in his general mien—swarthy and black-browed, with eyes that could soften or flash, but never harden, yet disclosing at times a melancholy depth…"[4] It is not, however, Kingsnorth's visage but his documented predicament that reminds me of Melville's John Marr. The prose poem "John Marr" has neither been popularized nor anthologized like its narrative brethren, "Bartleby the Scrivener" or "Billy Budd." Kingsnorth certainly has his near-Bartleby moment when he almost decides to stop writing due to a lack of intensity and commitment.

But Kingsnorth's situation in Ireland obscurely evokes, for this reviewer, John Marr's settled and unspectacular afterlife in a cabin on the American prairies after spending his life on the high seas. A sailor who retired due to an injury, John Marr's last years are spent consorting with the ghosts of his nautical chums for lack of better company in the vast landscape of the American interior. Marr's young family is already buried in the prairie, victims of frontier hardship, and he has nothing in common with the local settlers who quickly grow bored with John Marr's anecdotes about seaborn adventure. In his desperation to feel at home, John Marr compares the frontier, its waves of grass and voyaging prairie schooners, to the open sea. But something deep within him still misses the motion, the mythic quest, turbulence and comradeship amidst danger at sea. Nevertheless, he is home, and will not flee. "Being now arrived at middle-life, he resolves never to quit the soil that holds the only beings ever connected with him by love in the family tie."[5]

This is arguably Kingsnorth's story: that having planted roots with his family in Ireland, he still misses the motion and the risk of his life as a radical environmentalist who, for the sake of strong writing, had to stay close to the action, the battle on the front line, under the dark mountain. Nevertheless, he is home, and will not flee. Kingsnorth's imagination will henceforth be challenged to double the symbolic role of his homestead as both shelter from and exposure to the dark mountain.

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[1] See *Walking on Lava: Selected Works for Uncivilized Times*, eds. C. Du Cann, D. Hine, N. Hunt, and P. Kingsnorth (White River Junction, VT: Chelsea Green Publishing, 2017).

[2] Felix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: The Athlone Press, 2000), p. 28.
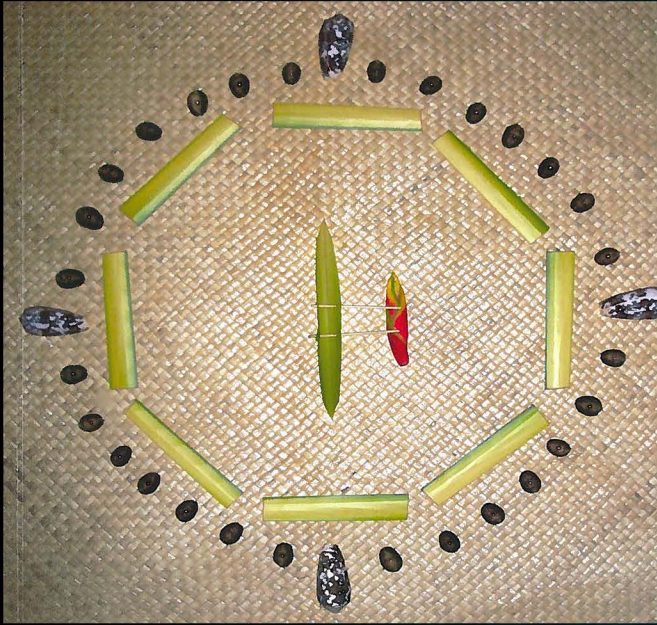
[3] Emmanuel Levinas, *On Escape*, trans. Bettina Bergo (Stanford, CA: Stanford UP, 2003), p. 53.

[4] Herman Melville, "John Marr," in *Herman Melville: The Complete Shorter Fiction* (New York: Everyman's Library, 1997), p. 396.

[5] Herman Melville, "John Marr," p. 396.

END

Heiwa: Heiwa is the pushing of the canoe on the unfolded mat to demonstrate how a canoe will actually sail in the ocean from the departure island to the destination island. The navigator uses one or more stars or constellations and uses the faunan etak (primary reference island) and possibly a fauan yatil (secondary reference island) in tracking the course. Heiwa is also used to explain the feeling of the canoe's movement caused by the waves and swells hitting the canoe.

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