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## Table of Contents

1. Hawai‘i Creole English: The Path to Understanding, by Britney Carey

9. Te Pito o Te Henua (The Navel of the World) or Prodigious Slagheap? The Rapanui struggle for land and sovereignty., by Robert Franklin

19. Waves of Change: The Role of Tsunamis in the Changing Built Landscape on Mokuola Island in Hilo Bay, Hawai‘i, by Holly Miller


40. Ocean Acidification: Cause, Effect, and Potential Mitigation Approaches, by Joanna M. Norton


53. Warm Brothers in the Boomtowns of Hell: The Persecution of Homosexuals in Nazi Germany, by Robert Franklin

60. Ka‘ao no Kawaiola, by Carol “Kawaiola” Gonsalves

63. A Synopsis of the Olympia Oyster (Ostrea lurida), by Ashley Bulesco

73. Fairy Tales Few Dare to Tell: Breaking Molds and Gender Stereotypes through Sexuality in Lost Girls, by Lindsay C. Brown

78. The Language of Heterosexism: Word Choice and Rhetoric in Anti-Gay Propaganda, by Britney Carey

85. The War of Jenkins’ Ear: Jingoistic mercantilism, pacifistic diplomacy, and the securing of the Georgia border., by Robert Franklin

94. Assessment of 1080 Use in New Zealand, by Christina Blakey

101. Reconceptualizing the Wilderness: Native American Landscapes and Euro-American Control in America’s National Parks, by Holly Miller

Aloha mai kākou!

Welcome to the ninth volume of Hohonu, the academic journal of the University of Hawai‘i at Hilo and Hawai‘i Community College. The entire staff at Hohonu is proud of the variety of exceptional academic writing in this volume and we are genuinely pleased to present our new publication to the community.

Hohonu, meaning profound or deep in the Hawaiian language, is a full-fledged level of excellence that we strive for in the work that is published within this journal. We not only live up to our goals to be in a state of hohonu, we live up to our goal to uphold and carry on our mission statement as well. We have strived to produce a journal that is reflective of our student body, their talents and interests. We have also encouraged our scholars to show pride in their work, allowing them to be able to share their thoughts, ideas and research with their peers. We have further, created a journal of quality academic writing conducive for students to learn something new about writing, to be exposed to a new subject or idea, to create different attitudes or perspectives to writing, or maybe to learning something new about themselves.

The success of Hohonu would not be possible without the diligent and excellent work of the rest of the Hohonu staff: Jenna Antilla, Ryan Rosenberg, Christina Blakey, Evelyn Moos and Jamilia Epping. It has been a pleasure and a privilege to work with such a dedicated and enthusiastic group. I am very appreciative of the willingness and positive attitudes of our ‘ohana, thank you!

Guidance and support were also essential to the success of this journal. I would like to thank Luke Bailey, our faculty advisor, for helping us to stay on track with his advice and direction. Thank you to the Board of Student Publications and the staff at Campus Center for their patience, support and direction. We would also like to thank Sunny Walker, our IT Specialist, who helped us with our website. Further, we would like to extend a heartfelt thank you to the authors for their cooperation and contribution to our journal, for if we did not have interested and brave authors, we would have no journal. Again, mahalo nui loa to everyone who has helped make this issue a reality.

While reading through our journal, we would like you to keep in mind how valuable Hohonu is as an asset to UH Hilo and HawCC, as we showcase the future voices of Hilo, Hawai‘i through the written word. We know and trust that students here in Hilo will change the world. We hope you enjoy this edition of Hohonu!

Mahalo a nui loa,

Haley A. “Ku‘uipo” Bufil
Editor-in-Chief
Linguistics 432

Hawai’i Creole English: The Path to Understanding

By Britney Carey

I. Introduction

For many people who live in the Hawaiian Islands, Hawai’i Creole English (HCE) is a native or, at the very least, a second language learned early on. Known more commonly as Pidgin, HCE reflects Hawai’i’s rich heritage and culture as it is a “mixed-plate” of linguistic and social structures.

In the late 19th century, Hawai’i’s sugar plantations employed laborers from around the world and as it was necessary for the laborers to communicate on the plantations, a “makeshift” language began to form (Sakoda & Siegel, 2003, p. 2; Crystal, 2008, p. 451). Hawaiian, Cantonese, and Portuguese influenced the development of this pidgin, known as Hawai’i Pidgin English (HPE) (Sakoda & Tamura, 2008, p. 41). HPE was even used for communications outside the plantation (Furukawa, 2007, p. 374). Speakers, using it at home, introduced HPE to their children, who would teach it to the next generation (Sakoda & Siegel, 2003, p. 2). By the early 1900s, HPE had become “the primary language of many” living in Hawai’i (Furukawa, 2007, p. 374).

Eventually, HPE began to replace other languages as the native tongue of plantation children (Yokota, 2008, p. 22). This occurrence marked the change from HPE to HCE, or, what we in Hawai’i call, Pidgin (Yokota, 2008, p. 22). When HPE underwent creolization, like many pidgins, it developed an expanded and more complex language structure (Sankoff & Laberge, 1984, p. 306).

Today, the linguistic situation surrounding HCE is one marked by controversy, misinformation, and outdated attitudes. Although HCE is spoken by more than 600,000 people, including 100,000 or more who do not speak standard English, it is largely seen as inferior to English; many believe it is a form of incorrect, or, even, “broken English” (Campbell, 2006, p. 2063; Siegel, 2008, p. 56). It is no wonder then, that standard English, in some form or another, is the instructional language used in Hawai’i’s schools (Lewis, 2009, para. 7). The use of standard English, and only standard English, in the classroom, may not be the optimal educational strategy for Hawai’i. Research suggests that HCE could be effectively utilized in educational settings. Currently, however, misinformation and a lack of awareness about HCE among Hawai’i’s schoolteachers, administrators, parents, and even students, is preventing such integration, and may be hurting, rather than helping, our Islands’ keiki. This paper will address this problem and its possible resolutions, including programs which call for the integration of HCE in the classroom.

II. Survey

In November 2010, I attended and presented a “rough draft” of this paper at a conference held by the North Hawai’i Community Children’s Council. Among the attendees were teachers, English Language Learner Program teachers, speech language pathologists, educational assistants, and state workers. As part of my presentation, I administered a brief and optional questionnaire about HCE; seventeen were returned. This survey was comprised of five statements which participants were to rate, on a scale from one to five, to what extent they agreed with each statement (see Appendix A for the complete survey).

An analysis of survey responses showed several interesting outcomes. For instance, the nine participants indicated that they disagreed with Statement 1 (Pidgin is not a language) while seven agreed with Statement 2 (Pidgin is a dialect of English). The fact that
a majority believe HCE is both a language and a dialect suggests that there is confusion among participants about what constitutes a language and a dialect. If the nature of HCE is not understood by or known to the community, how can we expect this linguistic situation to be addressed properly?

Statements 4 and 5 also elicited interesting, and to some extent, surprising responses. Before tallying up participant answers, I fully expected that a majority would agree with Statement 4 (Students who speak Pidgin should have no trouble learning in a classroom where standard English is the only language used). However, this was not the case: the majority of participants actually disagreed with Statement 4. Similarly, while I expected participants to agree with Statement 5 (Pidgin has no place in the classroom), the majority disagreed here. These results suggest that there is hope for successful classroom integration of HCE.

Although this survey was done purely for illustrative purposes, and is in no way definitive, it is worth considering. If nothing else, the results of this survey indicate that there does appear to be a lack of awareness about HCE present in the community.

III. Discrediting Myths and Misrepresentations in HCE

Perhaps one of the most common misconceptions about HCE is that it is simply a decrepit variety of English (Siegel, 2008, p. 56). This, of course, is not true. For almost half a century now, “sociolinguists have been showing that creoles such as [HCE] are legitimate, rule-governed languages that differ in systematic ways from the language from which most of their vocabulary is derived” (Siegel, 2008, p.56). For instance, HCE has a unique set of grammatical rules which sets it apart from its lexifier language, English (Siegel, 2008, p. 56; Burridge & Kortmann, 2004, p. 573). One such set of rules may be observed in the formation of negatives in HCE (Siegel, 2008, p. 56). According to Siegel (2008), HCE has at least four markers for negation, any one of which may occur before a verb, auxiliary, or modal (p. 56). Each marker has a specific function and rules which dictate how it may be used (Siegel, 2008, p. 56). For example, the marker nat may be used in three situations: (1) preceding the predicate in sentences which lack a verb, (2) preceding an –ing form of a verb (unless verb is preceded by ste), and (3) preceding sapostu (Siegel, 2008, p. 56). For a more complete list of negative markers in HCE, see Appendix B.

Another misconception about HCE is that it is somehow inferior to standard English (Da Pidgin Coup, 2008, p. 33). This assumption is false. No one language variety has ever been shown to be intrinsically superior to any other, and no one variety has been shown to be significantly more complex than any other in grammatical terms (Da Pidgin Coup, 2008, p. 33; Baugh, 1999, p. 9-10).

A statement made by State Board of Education Chairman Mitsugi Nakashima demonstrates that even those in the education sector are not immune to misconceptions bred of bias. To Nakashima, “if you speak pidgin, you think pidgin, you write pidgin” (Da Pidgin Coup, 2008, p. 35). Nakashima’s statement intended to imply that the use of HCE was to blame for poor student scores on national standardized writing tests (Eades, 1999, p. 6). Such a claim is, of course, unfounded for a number of reasons. For example, there are substantial differences between writing and speech, including the neurological processes involved in the facilitation of each act (Da Pidgin Coup, 2008, p. 35-36; Baugh, 1999, p. 12).

According to Fromkin, Rodman, & Hyams (2008), because “children learn to speak instinctively without being taught,” learning to read and write may not be equated with learning to speak (p. 791). In other words, the acquisition of human language is innate; the mastering of reading and writing, however, is not (Fromkin, Rodman, & Hyams, p. 791). If the only way a child acquires the necessary skills for reading and writing is through study, then it is not the students who
have failed the educational system, but rather, the other way around.

A fourth misconception is one which directly addresses HCE in the classroom. It has been shown that the concern that the use of non-standard language varieties, such as HCE, in schools will hinder students’ acquisition of the standard has kept such languages from being used in educational settings (Siegel, 2008, p. 59). The fear is that features of the non-standard variety will be inappropriately transferred when speaking or writing in the standard language, effectively interfering with a student’s acquisition of the standard (Siegel, 2008, p. 59). There is, however, no evidence that using HCE in the classroom would increase the likelihood of such interference, and, subsequently, would not affect a student’s ability to acquire standard English (Siegel, 2008, p. 59). Studies of programs which incorporate non-standard varieties into the classroom actually show the opposite (Siegel, 2008, p. 60). Successful programs have been carried out in the US Virgin Islands, Belize, the United States, and even Hawai‘i (Siegel, 2008, p. 60).

There is further trepidation within the community based on the concept of ghettoization, or the idea that the use of HCE in Hawai‘i’s schools will further disadvantage students who are already at a disadvantage (Siegel, 2008, p. 59, 61). As one community member put it, “Pidgin is passed from generation to generation and ensures that those limited to this form of expression are restricted to the lower rungs of the corporate ladder” (Childs, 2002, para. 5). Perhaps the best argument against this line of thinking is the fact that there are thousands of individuals who grew up speaking HCE and have gone on to become successful in life (Siegel, 2008, p. 61). Many of these individuals demonstrate a mastery of standard English and are able to “switch” between it and HCE, depending on the situation (Siegel, 2008, p. 61). It is not the mere act of speaking HCE which leads to socioeconomic inconsistencies, but, rather, archaic attitudes fueled by misinformation and shortcomings within the institution of education and the community (Siegel, 2008, p. 61).

Educational programs advocated for Hawai‘i which would integrate HCE into the classroom have been shown to aid in acquisition of the standard, therefore giving students a chance to get ahead (Siegel, 2008, p. 61). HCE-speaking students would not be isolated in these programs as all students would participate in the same classroom activities and be encouraged to use the variety of language they are most comfortable with (Siegel, 2008, p. 61), which will be discussed further in section IV.

**IV. Discussion: HCE and Education**

**IV.i. How can HCE be used in education?**

There are several types of educational programs which integrate and utilize creoles and other non-standard varieties into the classroom. Siegel (2008) discusses three specific types of programs: instrumental programs, accommodation programs, and awareness programs (p. 57-59).

Instrumental programs use the local non-standard language variety as a medium of instruction (Siegel, 2008, p. 58). Students initially learn to read and write in this language, and sometimes are even taught content subjects (i.e. mathematics) in the language as well (Siegel, 2008, p. 58). These programs are most effective when the local non-standard language variety is so dissimilar from the standard variety that the two may even be mutually unintelligible (Siegel, 2008, p. 58). Because the languages used are so different, these programs are similar to bilingual programs: the non-standard language variety is used as a means of acquiring a second language (in this case, the standard) (Siegel, 2008, p. 58). Instrumental programs have been observed in use around the world in such locations as Australia, Papua New Guinea, the Netherlands Antilles, and even the United States of America (Siegel, 2008, p. 58). They are, however, not advocated for use in Hawai‘i (Siegel, 2008, p. 58).
Accommodation programs make use of, but do not include as a medium of instruction, the local non-standard variety; the standard variety remains "the only subject of study" (Siegel, 2008, p. 58). In classrooms which participate in accommodation programs, students are permitted to use the non-standard variety for speaking and, occasionally, writing (Siegel, 2008, p. 58). Teachers may use the interactional patterns of students in order to encourage and augment acquisition of the standard variety (Siegel, 2008, p. 58). As with accommodation programs, awareness programs utilize and welcome the use of the non-standard language variety as an educational tool for the acquisition of the standard variety (Siegel, 2008, p. 58). Students are also encouraged to examine different types of language, exposing them to the concepts of dialect, creole, pidgin, and other misunderstood varieties (Siegel, 2008, p. 58). Also examined are the sociohistorical processes that facilitated the use of one variety over another as the standard (Siegel, 2008, p. 58). The contrastive component comes into play when students compare the linguistic characteristics of the non-standard variety with those of the standard (Siegel, 2008, p. 58). Siegel (2008) cites three awareness programs which existed in Hawai‘i: the Hawai‘i English Program (1968-1983), Project Holopono (1984-1988), and Project Akamai (1989-1993) (p. 58).

The integration of accommodation and awareness programs into Hawai‘i’s schools would encourage the use of HCE in educational settings, as well as allow students to express themselves in their own language (Siegel, 2008, p. 59). As will be discussed in section IV.ii, this type of self-expression plays a significant role in a student’s overall academic experience, any hindrance of which may have detrimental and long-lasting effects on Hawai‘i’s schoolchildren.

IV.ii. Benefits of the use of HCE in education

Studies done of accommodation and awareness programs suggest that there are many benefits to the use of HCE in the classroom (Siegel, 2008, p. 61). It has been observed that students who participate in such programs score higher on standardized tests and experience an increase in academic achievement (Siegel, 2008, p. 61). What is behind these positive changes? According to Siegel (2008), three factors are at work: “greater cognitive development, increased motivation and self-esteem, and the ability to separate codes and notice differences” (p. 61).

Children express themselves best in a familiar language and “when there is no fear of correction” (Siegel, 2008, p. 61-62). Thus, children are at a disadvantage when this need is denied them, when they are forbidden to use their own language variety (Siegel, 2008, 62). Because self-expression is required for cognitive development to take place, it is likely that students who do poorly in high school have not properly developed “transfer ability,” or “the…recognition by a learner that abstract reasoning processes learned with regard to materials in one context can be applied to different materials in a new context” (Siegel, 2008, p. 62). The only way that a student may develop transfer ability is through the discussion, description, and encoding of new materials (Siegel, 2008, p. 62). Because HCE is not used in education, HCE-speaking students are not able to express themselves using their own language, and may not be comfortable doing so in standard English (Siegel, 2008, p. 62). Accommodation and awareness programs facilitate cognitive
development because students are encouraged to express themselves however they feel the most comfortable (Siegel, 2008, p. 62).

It is widely accepted that motivation, attitude, self-confidence, and anxiety play a part in second language acquisition (Siegel, 2008, p. 62). Speakers of creoles often have a negative self-image (a result of frequent correction of their language, and the denigration of their speech and culture) (Siegel, 2008, p. 62). When value is placed on the students’ language(s) they are more motivated, have more self-confidence, and are less anxious (Siegel, 2008, p. 62). Students may also be concerned that learning the standard will result in the abandonment of their language and, thus, exclusion from their social group (Siegel, 2008, p. 62). A student who is encouraged to use his or her own variety in the classroom would have less of an adverse reaction towards assimilation; motivation to learn the standard should, therefore, increase (Siegel, 2008, p. 62).

By using a non-standard variety such as HCE in the classroom, students become aware of the differences between it and the standard (Sigel, 2008, p. 63). The “noticing hypothesis” suggests acquisition of a language is facilitated by attention to the target language forms, and “these forms cannot be acquired if they are not noticed” (Siegel, 2008, p. 63). Because awareness programs include contrastive components, students are encouraged to notice features which differ between their own language and the standard; this is the first step of language acquisition (Siegel, 2008, p. 63).

V. Conclusion

The motivation and reasoning behind the exclusion of HCE in Hawai’i’s schools are reminders of a linguistic history marked by intolerance and misunderstanding. At best, such justifications are misinformed; at worst, they are completely unwarranted. Students are being denied important educational opportunities because of the ignorance and bias plaguing Hawai’i’s educational institutions and communities. In order to cultivate a nourishing learning environment for all of Hawai’i’s children, we must put aside dated and inaccurate information and openly embrace HCE as a language of Hawai’i and of the classroom.

Footnotes

1 Although there were seventeen participants in total, one participant did not mark an answer for Statement 1; one participant circled both "Somewhat Agree" and "Somewhat Disagree" for Statement 2, forcing omission from the end count for Statement 2; one participant answered both "Somewhat Agree" and "Disagree" for Statement 4, also forcing omission from end count.

2 Other results: 2 "Somewhat Agree," 1 "Not Sure," 4 "Somewhat Disagree," 2 "Disagree," making the seven participants who "Agree" the majority.
References


Appendix A:  
Survey of Conference Participants and Results

The following is a brief survey about Pidgin. For each statement, please indicate whether you Agree (5), Somewhat Agree (4), are Not Sure (3), Somewhat Disagree (2), or Disagree (1). Please circle your choice.

1. Pidgin is not a language.
   Agree (5)    Somewhat Agree (4)    Not Sure (3)    Somewhat Disagree (2)   Disagree (1)

2. Pidgin is a dialect of English.
   Agree (5)    Somewhat Agree (4)    Not Sure (3)    Somewhat Disagree (2)   Disagree (1)

3. Students who speak Pidgin must learn standard English if they wish to be successful in life.
   Agree (5)    Somewhat Agree (4)    Not Sure (3)    Somewhat Disagree (2)   Disagree (1)

4. Students who speak Pidgin should have no trouble learning in a classroom where standard English is the only language used.
   Agree (5)    Somewhat Agree (4)    Not Sure (3)    Somewhat Disagree (2)   Disagree (1)

5. Pidgin has no place in the classroom.
   Agree (5)    Somewhat Agree (4)    Not Sure (3)    Somewhat Disagree (2)   Disagree (1)
Appendix B:
Negative Formation in HCE

Table 1, reproduced here from Siegel (2008, p. 57), shows the usage of negative makers, nat no, neva, and nomo in HCE.

<table>
<thead>
<tr>
<th>English</th>
<th>HCE with nat no</th>
<th>HCE with neva</th>
<th>HCE with nomo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Da kæt it fish.</td>
<td>Da kæt no it fish.</td>
<td>*Da gaiz no work.</td>
<td>Da gaiz nat work.</td>
</tr>
<tr>
<td>The cat eats fish.</td>
<td>The cat doesn’t eat fish.</td>
<td>Da gaiz nat work.</td>
<td>*Da gaiz no work.</td>
</tr>
<tr>
<td>Da gaiz work.</td>
<td>Da gaiz no work.</td>
<td>*Dei nat ste lisining.</td>
<td>Dei no ste lisining.</td>
</tr>
<tr>
<td>The guys are working.</td>
<td></td>
<td>They aren’t listening.</td>
<td>They aren’t listening.</td>
</tr>
<tr>
<td>‘They’re listening.’</td>
<td></td>
<td>They aren’t listening.</td>
<td>They aren’t listening.</td>
</tr>
<tr>
<td>‘I’ll tell him.’</td>
<td>‘I won’t tell him.’</td>
<td>Ai nat gon tel om.</td>
<td>‘I won’t tell him.’</td>
</tr>
<tr>
<td>Mai sista wan bas jraiva.</td>
<td>Mai sista nat wan bas jraiva.</td>
<td>‘My sister is a bus driver.’</td>
<td>My sister isn’t a bus driver.</td>
</tr>
<tr>
<td>‘My sister is a bus driver.’</td>
<td></td>
<td>Mai sista wan bas jraiva.</td>
<td>‘My sister is a bus driver.’</td>
</tr>
<tr>
<td>I kæn du twenty pushap.</td>
<td>I no kæn du twenty pushap.</td>
<td>‘I can do twenty pushups.’</td>
<td>‘I can’t do twenty pushups.’</td>
</tr>
<tr>
<td>‘I can do twenty pushups.’</td>
<td></td>
<td>Da buga nat braun.</td>
<td>‘The guy isn’t brown.’</td>
</tr>
<tr>
<td>Da buga braun.</td>
<td>Da buga nat braun.</td>
<td></td>
<td>‘The guy isn’t brown.’</td>
</tr>
<tr>
<td>‘The guy is brown.’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kærøl hæftu wok.</td>
<td>Kærøl no hæftu wok.</td>
<td></td>
<td>‘Carol doesn’t have to work.’</td>
</tr>
<tr>
<td>‘Carol has to work.’</td>
<td></td>
<td></td>
<td>‘Carol doesn’t have to work.’</td>
</tr>
<tr>
<td>Yu sapostu du dæt.</td>
<td>Yu nat sapostu du dæt.</td>
<td>‘You’re not supposed to do that.’</td>
<td>You’re not supposed to do that.</td>
</tr>
<tr>
<td>‘You’re supposed to do that.’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘I did it.’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gat kaukau in da haus.</td>
<td>*No gat kaukau in da haus.</td>
<td>‘There isn’t food in the house.’</td>
<td>‘There isn’t food in the house.’</td>
</tr>
<tr>
<td>‘There’s food in the house.’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nau wi gat ka.</td>
<td>*Nau wi no gat ka.</td>
<td>Nau wi nomo ka.</td>
<td>‘Now we don’t have a car.’</td>
</tr>
<tr>
<td>‘Now we have a car.’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Te Pito o Te Henua (The Navel of the World) or Prodigous Slageap? The Rapanui struggle for land and sovereignty.

Robert Franklin

Rapa Nui has much that makes it mysterious and alluring to the modern tourist, scholar, and non-Rapanui inhabitant. Its nearest inhabited neighbors are Chile, 2,300 miles to the east and the British-controlled Pitcairn Islands over 1,000 miles to the west, making it one of the most remote places ever to be settled on earth. Tales of Rapa Nui and its huge quarried stone statues (or Moai), gathered from short visits and speculation, spread back to Europe and the Americas igniting the imaginations of travelers and other explorers. Euro-American interests in Rapa Nui culminated in the annexation of the island by Chile in 1888. However, Chile was a second-rate colonial power and allowed Rapa Nui to languish as a colonized backwater totally owned by a singular private company who corralled the significantly reduced population into a small area of the island, removing them from their traditional lands and lifestyle. Conditions similar to this continued to persist even after Chile took direct control over the island in 1935; the exploitation of Rapanui land and people for ranching eventually transformed into the exploitation of Rapanui land and people for tourism, although much of the tourist industry is now undertaken by the Rapanui themselves. In the time since contact with Western powers broke their 1,300 year isolation from the world, the Rapanui indigenous and communal concepts of land ownership and sovereignty have come under attack as the Rapanui, who are now officially Chilean citizens, both adapt to and resist the Chilean model of individual ownership and a changing economic structure based on tourism and a cash economy.

To understand the changes that occurred because of contact with Euro-Americans a brief overview of pre-contact Rapa Nui is needed, although this is hampered by the lack of written records and oral histories due to limited contact before the 1860s as well as the extreme depopulation of the nineteenth century. While there are several theories concerning the settlement of Rapa Nui, the most accepted and supported is that Polynesian mariners came from the Marquesas anywhere between the fourth and eleventh centuries C.E. Rapa Nui is a sub-tropical environment with little rainfall (about one meter per year), and certain crops familiar to Polynesians (taro, breadfruit) and other materials (coral) were unavailable to the settlers. While Rapa Nui was forested with indigenous eucalyptus, the primary material available to the settlers was stone; this was used for houses, weapons, and ceremonial artifacts (such as the famed Moai). Though considered poor and backward by many visiting explorers, the Rapanui were actually productive users of the land and...
established a symbiotic relationship with each other and with a communal land tenure system. According to Rapanui oral history, upon landing the people divided themselves into two groups, each composed of clans and “other small groups who were related.” These groups were divided into classes, with a head chief, priests, and clans composed of a number of ivi, or households. Each ivi could trace its descent to a common ancestor, was composed of about thirty people, and was headed by the senior male. Each clan was given henua poreko ranga (the land where the ancestors were born) and this was divided among the ivi. According to an early anthropologist on the island working for the Bishop Museum, “All the people were supposed to have about the same amount of land to cultivate…each estate was probably a straight strip of land (kaingu) which stretched from the shore to the interior of the land.” Scholars differ on the inheritance patterns of pre-contact Rapanui. Patrick McCoy states that “property was inherited by children from both the father and mother” while Grant McCall claims that the first born, or “shadow of the king,” inherits his father’s land and possessions and that younger brothers must go elsewhere to found families.

On a larger scale the Rapanui divided their island by bisecting it from the east to the west, ending at the ceremonial village of Orongo. To the north lived the Tu’uavo clan group, who possessed marginal soil for agriculture but better access to sea resources; to the south lived the Hotuiti who possessed good agricultural land. Other smaller groups controlled access to other trade products such as ochre and obsidian. These smaller groups lived within Tu’uavo or Hotuiti territory and aligned themselves with the respective group. Both the Tu’uavo and Hotuiti were marriage partners with each other: “a man’s wife was his opponent’s sister, and his sister kept house for his enemy.” The pre-contact Rapanui had developed a land tenure system that was both matrilineal and patrilineal, and forced cooperation on a large scale (although warfare existed, it was not internecine) through the symbiotic relationship between ‘sister marriage’ and the balance between the Tu’uavo and Hotuiti clans.

This symbiotic relationship changed drastically after contact with Europeans. Rapa Nui was first sighted by three Dutch ships on Easter Day, 1722. More Europeans came to Rapa Nui intermittently – the Spanish in 1770, the English Captain Cook in 1774, and the French La Pérouse in 1786. These early contacts are important for many reasons: the Rapanui worldview was now forever altered with the arrival of a distinctively different race of people, European trade goods such as iron and cloth were introduced into a Stone Age system, and the outside world now knew of their existence from the journals of these early explorers. J. Douglas Porteous compares these journals to a “time bomb set to explode years later when traders, missionaries, and planters, their appetites whetted, began to flow into the new frontier.”

Most of the European expeditions did not stay long, averaging a few days to a week, for several reasons. The Europeans, for the most part, did not hold a high opinion of the land. In his journal Captain James Cook stated “[we] saw not an animal of any sort, and but few birds; nor indeed anything which can induce ships that are not in the utmost distress to touch at this island.” Joseph Gilbert, on the same expedition, wrote that “the land is exceedingly poor, the hills full of stones, of a hungry dry soil incapable of cultivation.” European explorers noted the eagerness of the Rapanui to trade, but were offended by the propensity of the Rapanui to try and steal any trade goods they could. Many scholars point to the fact that the Rapanui had a communal sense of property and were not aware of the notions of private property that the Europeans held.

Trade with the European explorers had a huge effect on Rapanui society. The symbiotic relationship between the Tu’uavo and Hotuiti changed as the Europeans, who favored deep water anchorages for their larger
boats, traded with the Hotuiti because their shoreline was better suited to European needs than the “shallow, sloping shore with rocks and reefs” favored by the Tu’uavo for their smaller craft. The Hotuiti, who controlled all the access to these new and sought after goods, were able to tip the balance of trade and amass more power than the Tu’uavo.

Porteous, summarizing Cook’s Pacific journals, states that “the introduction of new wants among people formerly oblivious of the dubious blessings of European technology was often sufficient to permanently disrupt existing social and environmental equilibria.” For the Rapanui, as with many other Pacific Island peoples, first contacts with the Europeans brought new goods and ideas which were a catalyst for the erosion of indigenous trade relationships and concepts of land usage.

Cook was right: the introduction of European goods, mainly weapons or metal to be forged into weapons, into Rapanui society caused internecine warfare as the various clan groups fought and clamored for control of the island. One thing that escaped his analysis was the disruptive effects of European diseases that spread to the Rapanui population, causing a marked decline. However, conditions for the Rapanui showed signs of improvement by the middle of the nineteenth century. The population decline had stabilized, the European visits were fewer and better managed, and the warfare which plagued the island during the early part of the century had subsided and ceremonial activities at the court of Anakena on the eastern part of the island were revived. However, the Rapanui were not completely isolated from the emerging imperialism in the Pacific. Taking a cue from other nations engaging in slaving activity in the Pacific in the early 1860s, Peru began to conduct slaving raids on Rapa Nui to capture people for work on Peruvian plantations and mines – in clear violation of any indigenous rights or sovereignty. It is hard to know exactly how many Rapanui were forced onto Peruvian ships but the number is put close to 1,000. Exposed to new diseases and challenging environmental conditions, about ninety percent of the Rapanui who were taken died within two years in Peru. The English and French governments, although they were engaging in similar activities in the Pacific, pressured the Peruvians to cease their slaving raids and repatriate the Rapanui. The Peruvians, apparently believing that one island is as good as another, deposited the remaining Rapanui on Tahiti and left them to find their way back to Rapa Nui. In total about two percent of those taken by the Peruvians arrived back to their homeland, and they carried with them infectious diseases which took a huge toll on the population.

During this time the first Christian missionaries, from Chile and Tahiti, began to arrive on the island along with a few private entrepreneurs looking to establish some sort of plantation economy. The missionaries established the first western buildings on Rapa Nui: a church, a one-room schoolhouse, and several western style houses were constructed. Conversions were sporadic at first, but a small number of converts settled near the Mission in present day Hangaroa. At around the same time a French captain, Jean-Baptise Dutrou-Bornier, landed on the island and began purchasing land from the Rapanui to start a ranching operation. Backed by Scottish and French financial supporters in Tahiti, Dutrou-Bornier began building allies with European trade goods and established himself as a pseudo-monarch, setting up a “council of state” to oversee land sales. Dutrou-Bornier became frustrated with the difficulty in attempting to purchase land from the Rapanui, who still held a communal view of land wherein the entire family owned the land and receive title according to “hereditary, compulsory, or voluntary occupation.”

Hippolyte Rousell, writing a few decades after the initial land sales, states “If you intend to buy land, you have...to buy the lands from all the individuals on the place in order not to cheat anybody.”

Allying with Torometi, a Tu’uavo chief, Bornier supplied the Tu’uavo with
western weapons helping the French-Rapanui force overwhelm the unarmed Hotuiti and Missionary allied force.²⁹ Now in control of most of the island, Dutrou-Bornier forcibly deported several hundred Rapanui to plantations on Tahiti and the Gambier archipelago.³⁰ Dutrou-Bornier underwent a spate of land purchases; most of the sellers were coerced with alcohol, intimidation, or violence, and many of the purchases had no witnesses, measurements, boundaries, or plans.³¹ The ranching company was now free to pursue its operations on Rapa Nui with minimal outside interference or indigenous resistance and began importing sheep in 1871.

Within a decade, the population of Rapa Nui fell from around two thousand to little more than two hundred, and went from practicing a traditional lifestyle on their traditional land to that of subsistence farming on small plots confined within Hangaroa. The main financial backer of Dutrou-Bornier, the Scottish Brander family, formally incorporated the relationship into the Brander-Bornier company. This company now controlled the entirety of Rapa Nui until the end of private ownership in the island in 1953, some seventy years into Chilean annexation. The effect of sheep ranching on the environment and people cannot be understated. Strong parallels can be drawn between the effects of large-scale ranching in Scotland and in Rapa Nui.

Differences in indigenous peoples and culture aside, both Scotland and Rapa Nui were semi-arid landscapes mostly covered in grassland. What remained of the indigenous trees in Rapa Nui was destroyed by the sheep, which ate the protective bark off of the trees and devoured the saplings. The Brander-Bornier company, and their successor, Easter Island Exploitation Company (CEDIP), attempted to solve this problem by introducing eucalyptus trees from Australia that shed their bark, and while successful, the wood was inferior and the Rapanui were unable to work it into traditional tools and art. Fences were constructed to keep both the sheep and Rapanui within a confined area, and to limit poaching by the Rapanui. Forced onto smaller and more marginal land, the Rapanui could no longer grow everything they needed to sustain themselves and had to rely on the seasonal work offered by the company. This forced introduction into a cash economy was made more exploitative by the fact that the only place to spend the cash earned was at the company store. Detailing the effects of ranching on subsistence societies like Scotland, Porteous writes that it involves “enclosures, population clearances, deserted villages, and the forced migration and proletarization of many peasants;”³² replacing “peasants” with “Rapanui” describes perfectly the situation in Rapa Nui.

The late nineteenth century is known to history as a high point in European imperialism. Large swaths of Africa, Asia, and the Pacific were conquered and divided up amongst the European powers. Chile, having just won the War of the Pacific against Peru and Bolivia, was looking to establish a South American imperial empire. With Valparaiso a major stop in trans-Pacific shipping, Chile annexed Rapa Nui in 1888 believing that it could be a very profitable refueling and resupply station. Chile questioned the legality of the annexation, citing that Rapa Nui was effectively terra nullius because the Bornier-Brander company (which at this time was involved in a complicated restructuring after the death of both Dutrou-Bornier and Brander) was not representative of any government, but rather they were operating on a tabula rasa, or “blank slate.”³³ Although the English, Spanish, and French could have claimed sovereignty over Rapa Nui, none chose to, most likely due to the marginal economical potential of the island compared to other Pacific islands. The claims of the Rapanui people for sovereignty were of course the strongest, but also the easiest to dismiss by all the other nations concerned with the issue.³⁴ The Rapanui were prevented from claiming both land and sovereignty by their small numbers and the existence
of a private security force employed by the company. The treaty of annexation was written in both Spanish and the Rapanui dialect (a mixture of Tahitian and what remained of the Rapanui language), and the two versions differed markedly. The Chilean version stated that the chiefs ceded the sovereignty over the island in favor of the Republic of Chile; in the Rapanui version Chile offered to be a “friend to the land.” As to the question of title to the land, legal scholar Maria Pereyra-Uhrle writes:

Neither version mentioned cession of property title. On the contrary, the oral tradition of Rapanui people records that Atamu Tekena, the ariki, grabbed a portion of land with grass in his hand, gave the grass to Policarpo and kept the land. This gesture meant that although sovereignty may have been ceded, Rapanui people retained their inalienable property rights over the land of their island.

However, it is obvious by the continued violation of Rapanui rights that neither the Chileans nor the ranching companies saw it this way.

Chile, claiming sovereignty but possessing no title, underwent negotiations with the heirs to the Brander-Bornier company for purchase of the island. Chile was able to acquire only about 2,000 acres (out of 16,000) through purchase because the owners of the majority of the shares were undergoing litigation in a French court. The ownership of the remaining acreage was settled after another Scottish ranching family bought the shares of the company and re-named it the Easter Island Exploitation Company (CEDIP) in 1892. The CEDIP was a branch of Williamson, Balfour and Company, which was described by its own historian as an “empire” that had offices in six continents. During this time Chile attempted twice to settle the island as an agricultural colony; both were miserable failures that resulted in total abandonment of the agricultural model. At this point in 1892, Chile was facing internal problems and public opinion was against sending more resources to Rapa Nui. In 1896 Chile instead chose to lease its 2,000 acres to CEDIP under a twenty year lease which stipulated that the company would fund a yearly supply ship and keep fuel and provisions for any Chilean ships that called upon the island. Rapa Nui now effectively became a Chilean colony in name only; in reality the Chilean state was not interested in developing Rapa Nui as a colony, rather it chose to let the CEDIP run the colony as a company state.

Complete CEDIP control of Rapa Nui continued until 1917 at which point Chile placed Rapa Nui under Naval authority and law, although the lease to the company was extended for another fifteen years. This was justified legally by the Chileans by a res nullius decision, that the territory was ‘nobody’s property’ and as such could be reassigned at will, thereby ignoring the wishes of both the CEDIP and the Rapanui. The impetus for this decision was the constant complaints by visiting church personnel and influential Chilean citizens to the government about company treatment of the Rapanui. The CEDIP was accused of “depriving the Rapanui of their land…giving almost of the scarce sweet water supply to their stock, and of driving the inhabitants from the coasts into the mountainous interior where the land was less fertile,” requiring company permission to leave Hangaroa, and sustaining inflated prices at the company store. While these accusations ring true, modern historians have laid much of the blame on Chile for allowing the complete monopoly of the CEDIP to exist without any government oversight. The Chilean government and CEDIP ignored the Rapanui demands for autonomy when asked: “...who gave the earth Merlet (the head CEDIP official on Rapa Nui) because it is a big robbery. They took this possession of ours, and they give nothing for the earth, money or goods or anything else. . .” The Chilean government again took a paternalistic attitude towards the Rapanui people, denying their connection to, and original ownership of, the land. Chile again renewed the CEDIP contract in 1933,
although this time provisions were added that forced the CEDIP to pay standard wages and provide rations for Rapanui workers. In January 1935 Chile declared the entire island to be a National Park “in order to protect natural and archaeological resources,” seemingly classifying the Rapanui as a natural or archaeological resource or artifact waiting for the right time to be exploited.

Although Rapa Nui was now under naval authority, little changed in the everyday lives of the Rapanui until the CEDIP lease was revoked in 1953. Conflict between the Rapanui and Chile with the CEDIP continued, several revolts were put down, and their leaders sent to exile in Chile. Effectively the Rapanui were prisoners in both the town of Hangaroa and on the island of Rapa Nui. There was little that the Chilean civilian or naval officials who lived on Rapa Nui could do for the Rapanui—the CEDIP controlled the annual vessel, all employment, and the island’s food supply, which effectively placed everyone in a position of company dependency.

By the early 1950’s Chile was taking a much larger interest in Rapa Nui as a base for international flights, and increasing scientific interest coupled with a broader decolonization movement pushed Chile to cancel the contract with the CEDIP and bring Rapa Nui fully under the control of the Valparaiso district. Conditions started to improve for the Rapanui, although the first real change was made from within. A generation of Rapanui children educated in mainland Chile, and other Rapanui who volunteered for naval service brought back with them new ideas that challenged the established naval order and sparked a revolution for self government. Perhaps this new influx of ideas can be compared to Plato’s “Allegory of the Cave” in that it is human nature to want education and betterment, to leave the cave to find knowledge and enlightenment, and the duty of an enlightened soul is to come back into the cave (Rapa Nui) and attempt to enlighten those still left in the dark. The first step of this move for self-governance was the election of an indigenous Rapanui schoolteacher as mayor in 1965. In 1966, the Chilean government passed Law 16441, better known as the Easter Island Law, which created the Municipal Government of Easter Island Provence; this law set up public service offices such as a court, a police office, a bank, and recognized the right of Rapanui people to vote as well as claim Chilean citizenship.

While this was a major step forward for the rights of Rapanui people, they were now placed firmly within the Chilean state and received no compensation for the loss of their land. The current state of land tenure in Rapa Nui is simple according to law, yet complicated in its application. In 1972, during the military takeover of Chile, the military junta replaced the civilian government with a military governor and placed Sergio Rapa Huoa, an indigenous Rapa Nui, in the position. For the first time a Rapanui person was effectively in charge of the island since annexation. The major change for the Rapanui came with the passage of Decree-Law 2885 in 1987 which “provided for the donation of land and the transfer of title over such lands to their ‘regular occupants’ (meaning persons born in and currently residing in Rapa Nui) and recognised the exclusive property right over land of Easter Island in native people.”

The Indigenous Law of 1993 enacted by the civilian government reaffirmed the Rapanui rights over their traditional lands and set up barriers to the sale of indigenous land. These laws set up commissions made up of ethnic Rapanui that helped facilitate the transfer of land if the application was approved by the court, leaving room for the court to deny applications if the land was currently in use by the Chilean state.

Rapanui concepts of land ownership have necessarily changed since pre-contact. After forced movement to Hangaroa, the Rapanui from the entire island chose to emphasize their ties with the members of their extended family that possessed claim to those lands. Each plot of land claimed

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by a Rapanui is held in common by their taina, a literal or figurative kinship group that can consist of family or close friends. For a modern Rapanui to claim land on which to build a house and farm a garden plot they must appease the wishes of the taina; those supportive of their taina will find access to land, and those that ignore the taina will find themselves without land to build a home on. This reinforces the communal nature of Rapanui life, for “land is the material basis for determining kinship” and a house and land are “tangible symbols of success for the Rapanui,” and a symbol that they are an accepted member of their taina. Grant McCall sums up the importance of land to the Rapanui:

Land is the most crucial productive instrument that the Rapanui have… from the land people derive their food, a place for their residence, an inheritance to pass on to their children, and literally a place in the community.

The Rapanui do face strong pressure to abandon this system of communal ownership that is so contrary to western views of land. Since the 1980s the Chilean government has offered subsidized housing for those who will register their land titles individually, thereby weakening the communal power of the Rapanui over themselves. While Rapanui are the recognized owners of the land, much of the land is still without title, and since Chilean law gives usage rights to all citizens, non-indigenous people often come to Rapa Nui and setup businesses catering to the tourist trade on Rapanui land. While this is technically illegal, the Chilean government is lax on enforcement and protest is ongoing at the time of this writing.

Since the 1960s and the closure of the CEDIP the Rapanui now struggle with integration into the capitalist system via the two avenues of making a living on Rapa Nui – tourism and wage labor. With the construction of an airstrip in 1965 and the abandonment of the American satellite tracking station in 1972 (which left a large amount of materials such as vehicles and trailers behind, some in Rapanui hands), Rapa Nui started to experience the beginnings of the tourist trade. Currently the Rapanui are heavily involved in tourism; as in many of the Pacific islands, cultural tourism is dependent on the indigenous people who either market themselves and their culture, or see it marketed for them. The most recent data from 2010 shows that Rapa Nui receives the highest number of tourists per capita in the world, hosting almost 50,000 annually - an amount over nine times the total population. The necessity to market their culture and land has resulted in much of Rapa Nui being designated as protected and unavailable to build on or farm. Concurrent with Rapanui dependence on tourism is the dependence on the Chilean state apparatus. Wage labor is necessary in Rapa Nui and three-fourths of the island’s population either works for the government or is dependent on someone who does. That their income comes from only tourism and government spending puts the Rapanui in a precarious position. With little familial support outside of Rapa Nui the vast majority of jobs are restricted to tourism or government wage labor; this, combined with the pressure of the Chilean government to choose individual land titles, has left the Rapanui almost totally dependent on forces outside of their control for their subsistence, just as they have been since annexation in 1888.

From first contact the Rapanui have struggled against Europeans that saw the Rapanui as curiosities inhabiting a blasted landscape, a pool for slave labor, and a primitive people standing in the way of capitalistic notions of land use. For the Rapanui, annexation by Chile in 1888 during the high point of European imperialism changed little (though during the ranching era their land underwent significant change), as they continued to exist as virtual prisoners on the edge of a second rate Pacific empire. The establishment of Rapa Nui as an official part
of the Chilean state brought some positive change to the Rapanui in the form of access to education and a better standard of living, but at the cost of almost total reliance on the Chilean government and tourism. The image of the exotic Pacific Islander has changed little over the centuries; it continues to draw tourists from all over the world to Rapa Nui and likely will in the future. How the Rapanui can control and benefit from this, while minimizing the damages inherent in tourism and government dependence, is a question central to their survival as an indigenous people.

Footnotes

1 Many different names are used for the island commonly known as Rapa Nui, Te Pito o Te Heaua, Easter Island, Isla de Pascua (Spanish). I will use Rapa Nui throughout this essay as this is what the original inhabitants (known as Rapanui) choose to call their home.

2 That Rapa Nui could have been settled from mainland South America is possible, as proved in the 1947 Kon-Tiki expedition, however the similarities of the Rapanui language to that of other Polynesian languages strongly suggests a Polynesian origin.


4 It is a common theory that the Rapanui destroyed their forests leading to an increasing instability and a decline in productivity, when in fact much of the forest was destroyed by the sheep introduced by the Scottish CEDIP (Easter Island Exploitation Company). From J. Douglas Porteous, “Easter Island: The Scottish Connection,” Geographical Review Vol. 68 No. 2 (1978), 153.

5 J. Douglas Porteous in The Modernization of Easter Island combines the opinions of Alfred Métraux and Robert Casey to show their naked bias and contempt for the land: “A monstrous pumice-stone, an enormous scoria, a prodigious slagheap…that is the best definition of Easter Island”

6 McCall, 33.


8 McCoy, 97.


10 McCoy, 97.

11 McCall, 36

12 McCall, 33.

13 McCall, 30.

14 This is of course where the name ‘Easter Island’ originates.

15 The Spanish Captain, Gonzáles, claimed the island for Spain. This claim is not seen to have any legal binding as Spain never sent another ship to trade with or colonize Rapa Nui.


17 As quoted in Porteous, The Modernization of Easter Island, 11.


McCall, 50.


McCall, 54.


McCall, 72.


Roussel, 429.

McCall, 62.

Porteous, The Modernization of Easter Island, 16.


Porteous, “Easter Island: The Scottish Connection,” 149.


Porteous, The Modernization of Easter Island, 73.


Maria Pereyra-Uhrle, 136.

Porteous, The Modernization of Easter Island, 81.

Maria Pereyra-Uhrle, 137.

Maria Pereyra-Uhrle, 137.

McCall, 70.

McCall, 72-73.

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Introduction

Tsunamis, or seismic sea waves, have impacted Hawai‘i since the islands formed millions of years ago. The archipelago’s location in the middle of the Pacific Ocean makes it a prime location for the reception of tsunamis that have their sources along the rim of the Pacific. Most destructive tsunamis in Hawai‘i can be traced to large undersea earthquakes off the coast of South America, along the Aleutian Islands, and near the Kamchatka peninsula. Since tsunamis spread out in a great circle from their epicenters, Hilo is particularly vulnerable to tsunamis due to its north-easterly orientation. The small island of Mokuola in Hilo Bay, often called ‘Coconut Island’, is especially prone to the destructive forces of these tsunamis. This is because the island is situated just off-shore where the energy in tsunami waves has had little chance to dissipate. All of the major tsunamis that have entered Hilo Bay have wreaked havoc on any structures built on Mokuola. Yet the people of Hilo continue to build on the island because of its culturally-significant and beautiful setting. Before Western contact, Mokuola was a place of refuge and place of healing and spirituality for Hawaiians. As society and culture changed in Hilo, other structures were built there. A small hospital was there, then bathhouses, a family home for the island’s caretakers, a sliding board and wooden diving pier, concrete reinforced walls, boat docks, a military barracks and recreation facilities, a wooden bridge, concrete diving platform, a large concrete and steel bridge, and finally a modern cinder-block bathroom and pavilion. While the culture and people of Hilo changed the built landscape of the island according to their needs or desires, powerful tsunamis were often the forces that erased the previous landscape so that a new one could be designed. Additionally, decisions about what to build, especially after people began to better understand the threat of tsunamis in Hawai‘i, were made to mitigate the effects of future tsunamis. Land-use planning and disaster preparedness now play an important role in how the park is used and what structures exist there. This essay will outline what tsunamis are and how they form, why Mokuola is so vulnerable to them, what impacts they have on the island and people who use it, how tsunamis are predicted, and what land-use and hazard-reduction policies are in place at Mokuola.

Tsunami Causes and Functions

There are several forces that can cause tsunamis. Undersea earthquakes are the most common cause, but tsunamis can be generated by volcanic eruptions and their associated pyroclastic flows, landslides, underwater landslides, and meteorite impacts. In all cases, a high-energy event displaces a large amount of water, which then spreads out from its source. Volcanically-produced tsunamis occur when an underwater volcano erupts into water, when an underwater caldera collapses, or when a near-shore volcano sends a large pyroclastic flow into the sea.\(^1\) Landslides can cause tsunamis when materials on slopes become unstable and fail. This can result from disturbance by earthquake or volcanic eruption, storms and rain, or the eventual failure of a slope due to long-term
deposition of material. Undersea landslides occur when slopes on the sea floor collapse due to some kind of disturbance or long-term build-up that reaches a stability threshold. Landslides can produce both remote-sourced tsunamis and local tsunamis, which cause destruction over a relatively small area. Meteorites can also cause tsunamis, though none have occurred in recorded history. However, meteorites have the potential to cause “mega-tsunamis,” or tsunamis that have wave amplitudes over 300 feet. These waves could wash inland for hundreds of kilometers. It is theorized that an asteroid impact that caused the extinction of the dinosaurs 65 million years ago generated a mega-tsunami. Most of the tsunamis that impact Hilo Bay are generated by remote undersea earthquakes in the Aleutian Islands, the Kamchatka Peninsula, the Gulf of Alaska, and off the coast of South America. Therefore, it makes sense to focus primarily on undersea earthquakes as tsunami sources and their subsequent effects on Mokuola.

Not every undersea earthquake generates a tsunami. Generally, large undersea earthquakes with a magnitude of 6.5 or greater on the Richter scale have the potential to cause tsunamis, though two-thirds of destructive tsunamis in the Pacific have been generated by earthquakes with a magnitude of at least 7.5. Earthquakes that cause tsunamis usually occur along oceanic subduction zones, or trenches, where the denser oceanic plate slides under the less dense continental plate. The thrusting up, down, or even sideways movements of the seafloor in “tsunamigenic earthquakes” is typically associated with a shallow earthquake focus, and the resulting displacement of the seafloor by several meters can occur along long fault lines and over thousands of square miles. When the seafloor shifting displaces the column of water directly above it, the energy from the earthquake is transferred to the water and “can propagate outward from the source at a speed of more than 1,000 km per hour depending on the depth of the water.”

It is important to note that when a tsunami is generated, a series of waves moves out radially from the source, not just one single devastating wave. The typical wavelength, or the distance between crests, can measure from 50 to 500 kilometers, and wave periods, or the time between the arrival of the first and second wave crest, can range from 1.6 to 33 minutes. The largest wave in a tsunami may occur early in the series or late, which can give people a false sense of security when they observe a small initial wave and believe that the worst is over.

A tsunami in the deep ocean behaves very differently from a tsunami approaching shore. Since tsunami waves are not generated by wind action, their movement in the deep ocean stretches from the seafloor to the water’s surface. Their speed of travel is directly related to the ocean’s depth as they pass. In deep waters, tsunamis can travel at more than 500 miles per hour but have a wave height of less than a meter. This is why people on ships often do not sense tsunamis as they pass under them, and also why boat owners take their crafts far from shore when there is a tsunami threat. As tsunamis move into shallower waters, their velocity decreases, causing the energy in the wave to become compressed. A wave traveling at the same speed as a jet in the deep ocean will slow to 100-300 kilometers per hour across the continental shelf, and only 36 kilometers per hour when it reaches shore. This causes a wave that may have had a height of less than a meter in the open ocean to become several meters high at shore. The exact way in which a tsunami arrives is controlled by the local bathymetry, or undersea topography, the directionality of the wave, and the magnitude of the generating event. Tsunamis can arrive like a quickly-rising and falling tide, like a series of waves breaking over one another, or as a wall of water. Either the crest or the trough of the wave can arrive first. If the trough arrives, the ocean will recede drastically, often exposing the seafloor. This can be a warning for people near the shore. However, if the crest of the first
wave arrives first, there could be no warning whatsoever.

Tsunamis in Hawai‘i can cause major destruction in some places and cause little to no damage in others just a few miles away. Hilo Bay and Mokuola are particularly vulnerable to tsunami damage due to a number of reasons. First, the local bathymetry and the shape of Hilo Bay determine how the waves will form. The water surrounding Hawai‘i Island, due to the island’s large size, is relatively shallow for quite a distance from shore. This means that tsunamis, when approaching the island, slow in velocity and increase in wave height. Hilo Bay, with its wide opening and funnel shape that narrows as it approaches shore, acts to amplify any approaching tsunamis. Second, Hilo Bay has little coral to absorb tsunami energy. The presence of coral reefs and other near-shore coarse topography can act to absorb the energy of the tsunami, lessening its effect on the shore nearby. Third, tsunamis can be amplified when their arrival coincides with the seiching rhythm of a bay. A seiche is basically the natural oscillation, or the sloshing back-and-forth of a body of water. Whereas a bathtub might have a seiching period of just a couple of seconds, a bay might have a seiching period of minutes to hours. Dudley writes that the “[t]he impressive wave heights tsunamis produce in Hilo Bay are at least partly related to the seiche effect.” Finally, Hilo Bay is geographically located in a prime position to receive tsunamis. Most tsunamis that affect Hilo are generated in the northern Pacific and along the coast of South America. The faults that these tsunamigenic earthquakes occur along are elliptically shaped with their bow facing south and west, respectively. When a tsunami is generated, “the major part of the tsunami energy is transmitted at right angles to the direction of the major axis, both toward the near shore and along a great circle path toward the shore on the opposite side of the ocean.” Hilo Bay’s north-easterly facing orientation makes it especially susceptible to tsunamis generated in these locations.

**Tsunamis and the Changing Built Landscape at Mokuola**

Mokuola is situated just offshore in Hilo Bay with a maximum elevation of just a few feet above sea level, making its entire surface vulnerable to tsunamis. When tsunami damage is discussed, the term “run-up” is used to designate the farthest point that a tsunami will wash up on shore, while “inundation” is used to describe the maximum depth of the water above a normal sea level during the tsunami. The entirety of Mokuola has fallen within tsunami run-up and inundation levels in all major tsunamis in recent history, and the built landscape at Mokuola has undergone several major changes necessitated by the destructive forces of these tsunamis. Depending on social needs and who had the means to make decisions about what would be built, the look and use of Mokuola has changed drastically over time.

Mokuola, in Hawaiian culture, is a place of healing. A rock just off its shore is believed to have healing powers, and people who are sick have come to Mokuola to swim around the rock in the hopes of healing their ailments. Any structures present on the island before Western contact were not recorded in the written record, but the site as place of healing stretched all the way into the late 19th century. It is not known if the Hawaiian beliefs about Mokuola actually determined the island to be an appropriate site for a hospital, but that is precisely the first structure known to be destroyed by a tsunami there. In a May, 1877 article in the Pacific Commercial Advertiser, Marshal Parke wrote, “The water swept completely over Cocoanut [sic] Island, and the hospital there has disappeared.” At this point in history, Hilo’s society was changing. The state religion of Hawai‘i had been abolished by Kamehameha II in 1819, and Western businessmen and missionaries were beginning to make up a significant part of Hilo’s population. Mokuola became either crown or government property in
the 1848 land redistribution, but as the 1800s progressed, the Hawaiian monarchy lost its power to the Westerner-dominated government. Hawai‘i became a U.S. territory in 1898, and control of Mokuola fell into the hands of the local government and the territorial government. A distinct separation between work and leisure had developed in Western society, and parks where leisure could take place became naturalized in Western landscapes. Mokuola, as a place both prone to destructive tsunamis and a beautiful setting away from the town center, was officially designated as a park in 1907 by the newly-incorporated County of Hawai‘i. People often went to Mokuola for picnics and for swimming, but some Hawaiians continued to come to Mokuola for healing.

Bathhouses for swimmers and picnickers were erected on the island in the years following the 1877 tsunami. Later, Hawai‘i County hired the Keli‘ipio family to be the caretakers of the park, and the family built a private residence and boat dock on the island sometime shortly after the turn of the century. A sliding board and diving tower appear in pictures about 1918. According to Paul Keli‘ipio, who took over the caretaker position after his mother died, the family was asked by the county to move from the island to a house on the adjacent shore, but the home stood there until 1923 when another tsunami destroyed all of the structures on the island. An excerpt from the Hawai‘i Herald, 8 February, 1923, describes the damage:

Cocoanut [sic] Island was pretty well wrecked. The wave swept it completely. The old house formerly used by the keeper of the island, was turned completely around and swept seaward for a distance of about 20 feet and then laid flat on the ground. A tall cocoanut [sic] tree, directly in its path was snapped off at the ground. The bathhouses were also torn down and moved some 12 feet nearer the landing place.18

New bathhouses were built on the island following the 1923 tsunami, and the Keli‘ipios continued to ferry park-goers between the mainland and the islet. However, when the United States entered World War II, the U.S. military took possession of the island and closed it to the public.

In 1942, Mokuola USO was established, and recreational and training facilities were constructed there for American soldiers. The facilities were officially opened to soldiers in 1943, and the military kept the island off-limits to the public until 1945.19 The army constructed a pontoon bridge to the island as well, the first bridge to ever connect Mokuola to the adjacent shore.20 When the island was finally turned over to the county in 1945, the pontoon bridge was put off-limits due to it being a “hazard to children and too costly to maintain.”21 Boat service between the island and the shore resumed until April 1, 1946 when a devastating tsunami once again destroyed all of the structures on Mokuola except for a concrete diving tower that is believed to have been constructed by the Army Corps of Engineers for training purposes.

A 7.3 magnitude earthquake south of Unimak Island in the Aleutian chain generated the 1946 tsunami that swept completely over Mokuola and continued onto shore, destroying businesses and homes, and took 96 lives in Hilo.22 As mentioned, the shape of Hilo Bay and underwater bathymetry contributed to the destructive power of the waves. Additionally, a phenomenon known as a ‘bore’ is believed to have contributed to the waves’ destruction at Hilo. A bore appears as a wall of water, which is created when the waves move through shallow water and begin to slow in velocity but increase in height. The waves in front move more slowly than those behind, which allow them to “pile up” as the distance between wave crests diminishes.23 The waves reached 7.5 meters above normal sea level at Mokuola, as marked on a coconut palm standing on the island today. Although the setting of Hilo Bay largely enhanced the destruction of the
waves, it is believed that the breakwater that was completed about 1930 actually helped to mitigate the tsunami’s effects by absorbing some of its energy. On the same token, buildings that received the full force of the waves along the Hilo bay front absorbed much of the tsunami’s energy, thereby reducing the waves’ effects on buildings situated further back. Following the tsunami, “seismic wave rehabilitation” funds were in part allocated for the reconstruction of park facilities and a new bridge at Mokuola. The park’s facilities were finally completed in 1949, and in 1951 a new bridge was constructed on the island. Just one year later, a tsunami generated near the Kamchatka peninsula swept completely over the island and destroyed the new park facilities.

After the 1946 tsunami, Hilo began to modify its approach to development and building design. The area along the bay front between Kamehameha Avenue and the ocean was re-designated a buffer zone where no businesses could be built. Any remaining businesses were condemned and torn down, and trees were planted in the area to absorb the energy of future tsunamis. The highway along the waterfront was raised, and a warning system with sirens was put in place. Mokuola naturally fell into the category of limited use areas, as it had historically been severely impacted by tsunamis. Its use as a park adhered to appropriate precautionary use of the site. However, the new buildings at Mokuola were not able to withstand the 1952 tsunami that once again destroyed all of the facilities there. A 1957 tsunami then damaged the bridge there, but repairs were made quickly and it remained open until the next major tsunami struck the island.

The May 22, 1960 tsunami was generated off the coast of Chile by an undersea earthquake with a magnitude between 8.25 and 8.5. This time, a cohesive system of Pacific-wide seismographs and tidal gauge stations sent information to a disaster warning system in Hawai‘i. With so many tsunamis in recent history, Hilo’s disaster-preparedness agencies and government had made important land-use changes and were prepared with warning sirens and evacuation plans. However, 61 deaths still occurred, mostly due to people’s unwillingness to heed warnings, combined with a recent change in the warning siren system. Just a few months before the 1960 tsunami, the warning system changed from a three-siren warning in which the first siren meant a warning was in effect; the second meant people should evacuate; and the third would sound just before the arrival of the first wave. The new system had only one siren that meant “evacuate immediately.” Clearly, not enough work had gone in to re-educating the public about tsunamis and the local warning systems in place. At Mokuola, the tsunami once again washed completely over the island, destroying all buildings and the new bridge there. For three years, Mokuola was abandoned. In 1963, Hilo Boy Scouts cleared the island of weeds, and then in 1966 the 4H club once again cleaned up the island and cleared it of weeds. Funds were eventually allocated for a major restoration project of the island, including a new metal and concrete bridge, and new concrete walls to slow erosion. By 1969 the bridge was completed and the park was re-opened to the public.

The park facilities constructed following the 1960 event remain in place as there have been no major tsunamis to affect Mokuola since then. The bridge and buildings were designed to withstand future tsunamis. The bathhouse is constructed of cinder-block with drainage openings around its base for water to flow in and out of. As Shepard wrote in 1950, “experience has shown that well-constructed reinforced concrete will sustain little if any structural damage.” Drainage systems have been put in place on the island, and the pavilion has a concrete slab base and is open so that tsunamis can flow through. The bridge is situated high over the water and is composed of metal and concrete. The only structure that stands on the island today that was there before 1960 is the concrete diving
platform, which first appeared in photographs of soldiers using it for training purposes during WWII. This concrete structure testifies to the power of tsunamis that wiped out anything composed of weaker materials. While concrete, cinder-block and metal are surely more resistant to tsunamis than wood, they are not completely immune to the powerful forces of large tsunamis. The future could bring destruction to the current facilities as well, ushering in a new round of rebuilding. It is clear, however, that Hilo’s residents choose to build at Mokuola because of its ideal setting for a park. Considering our modern understanding of tsunami risk in Hawai’i, a park is the only appropriate use of the place as deemed by the local planning association.

**Tsunami Hazard Mitigation and Forecasting**

Although Thomas Jaggar of the Hawai’i Volcano Observatory warned authorities of the possibility of a tsunami in 1923 (which did come to pass), no official warning and detection system was put in place until after the 1946 tsunami. The United States Coast and Geodetic Survey was asked to develop a system that could “1) detect rapidly and accurately the location of each earthquake; 2) determine the actual existence of a tsunami; and 3) calculate the expected time of arrival of the tsunami in the island.” The Seismic Sea Wave Warning System (SSWWS) was established in 1949, and used several seismograph stations around the Pacific and on the U.S. mainland to triangulate the exact location of earthquakes’ epicenters. Tidal gauges were put in place around the Pacific to detect tsunami waves, and the Tsunami Warning Center was established as the program’s headquarters at the Honolulu Geomagnetic Observatory. When tsunamis were detected, the center issued warnings to civil and military authorities. In Hilo, a siren warning system was put in place and evacuation maps were created. Warnings were issued over the radio. A major rezoning project identified most of the bay front and vulnerable areas as a buffer strip where no businesses or homes could be built.

Although the warning system functioned correctly during the 1960 tsunami, many problems were identified, and changes were made following the disaster. Detailed and updated tsunami inundation and evacuation maps were designed. Further rezoning of vulnerable areas was conducted by the newly-established Hawai’i Redevelopment Agency under Project Kaiko’o. This project expanded the bay front buffer zone and determined that lands falling within buffer areas could have limited use, as defined by the project. Parkland and greenbelt is the most common land use, of which Mokuola falls under. The project also filled certain areas to increase their mean elevation, making the areas less susceptible to tsunami flooding. The Small Business Administration made loans available to local business people to help them rebuild. The United States Congress also made funds available for construction of tsunami protection barriers with recommendations, including two rockfill barriers and a land dike. An elevated highway was constructed along Hilo’s bay front, which protects the downtown area from storm surges and moderate tsunamis. The U.S. Army Corps of Engineers suggested building a 22-foot high seawall that runs from the Wailuku River all the way to Mokuola, although this suggestion never came to fruition. This particular suggestion would have undoubtedly changed the character of the park significantly.

The need for better public education about tsunamis was illustrated by the 1960 tsunami and its effects. Had the public been more knowledgeable about how to react to tsunami warnings, the 61 deaths that occurred could have been prevented. One of the causes of confusion was the change in the warning system, as mentioned. However, several studies show that people are generally unaware of what actually occurs during a tsunami. People often believe it consists of just one wave, or that the largest wave will always come first. They don’t understand that
every tsunami is unique and can vary greatly in how it will affect coastlines. People may not understand where their local evacuation areas are, or where to go when a tsunami warning is issued. Key terms used to describe tsunamis like run-up and inundation are often not understood. Mild tsunamis in 1952 and 1957 caused many people to believe that the 1960 tsunami would also be mild, even with the memory of the devastating 1946 tsunami in many people's minds. Dudley writes that the tourist industry in Hawai'i is reluctant to educate their guests about tsunamis for fear that the information might scare guests away.** Warning systems can only work when the public understands what to do when a warning is issued.**

Today, tsunami education is important in Hilo. Several agencies, including the National Atmospheric and Oceanic Administration (NOAA), the Pacific Tsunami Museum, the Pacific Disaster Center, and Hawai'i Civil Defense, all work to bring education programs to schools, businesses, communities, and to media outlets like the internet, television and radio. Hawai'i phonebooks have tsunami evacuation information and maps in the front, and new information and technologies are consistently updated. Several websites and publications detail how tsunamis behave, how people can be prepared for disasters, and what one should do during a tsunami warning. Hawai'i Civil Defense designates shelters, has evacuation plans, and puts up manned roadblocks around danger areas.** Monthly tests are performed on the tsunami warning sirens around Hilo, which can be heard along all parts of Hilo's coast, including Mokuola.**

Tsunamis are detected in much the same way as they were in 1960, with the exception of several new tsunami detection buoys that line the Pacific Rim.** These buoys are attached to an anchored pressure sensor on the seafloor. When a tsunami is detected, the buoys relay data to NOAA's Tsunami Warning Centers around the Pacific, and these centers then send this information to civil defense organizations. Any earthquake with a magnitude of 7.5 or greater that occurs in an area that could generate a tsunami will automatically generate a tsunami watch. If a tsunami is then detected, the warning is issued.** If a tsunami warning is necessary, the Emergency Alert System is notified, which then broadcasts warning messages over television and radio. Hilo's sirens will sound three hours prior to the expected arrival of the first wave, which is a call to listen to the radio for emergency messages. The siren will sound again two hours, one hour, and thirty minutes before the expected arrival of the first wave.** People can also subscribe to mobile phone alerts for tsunami warnings.

**Conclusion**

On Mokuola there is a coconut palm with small plaques that indicate the maximum wave height of tsunamis that washed over the island. For those who have not experienced a tsunami first-hand, the 1946 marker 26 feet up the tree allows for a deeper understanding and respect for tsunamis. Standing at the base of the tree, it seems almost impossible that a wave that high could crash over the islet. Although no major tsunamis have struck Hilo since 1960, it is undoubtedly just a matter of time before they do. Downtown Hilo may be able to stave off much of the damage due to hazard mitigation actions taken like designating the buffer zone and building rock walls, but Mokuola has little protection. Its beautiful setting and proximity to the hotel area demands that no major protective structures be built that would threaten the aesthetic quality of the island. This means that the structures built there now and in the future must take into account the likelihood that a major tsunami will once again crash completely over Mokuola. With what we now know about tsunamis, it is unlikely that the zoning and nature of land use at Mokuola will change like it has in the past. While a hospital will likely never be built there again, its historic presence and all of the other subsequent changes in the built landscape.
have much to tell us about how we have come to live with and mitigate the effects of tsunamis in Hawai‘i.

Footnotes

1 Walter C. Dudley and Min Lee, Tsunami! (Honolulu: The University of Hawai‘i Press, 1998), 80.

2 Ibid, 72.

3 Ibid, 314.


8 Walter C. Dudley and Min Lee, Tsunami! (Honolulu: The University of Hawai‘i Press, 1998), 90.

9 Ibid, 90.


13 Ibid, 92.

14 Ibid, 93.


18 “Cocoanut Island Suffers,” Hawai‘i Herald, February, 8, 1923, XXVI no. 27, 5.

19 Kent Warshauer, “Visiting Coconut Island was once no easy feat,” in The Riddle of the Relic (Hilo: Memories of Hawai‘i LLC, 2006), 417.

20 Ibid, 417.

21 Ibid, 417.


26 Kent Warshauer, “Visiting Coconut Island was once no easy feat,” in The Riddle of the Relic (Hilo: Memories of Hawai‘i LLC, 2006), 417.

27 Hilo Technical Advisory Council, Protection of Hilo From Tsunamis (Hawai‘i County, 1962), 7.

28 Ibid, 7.


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33 Ibid, 419.

34 Ibid, 419.


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39 Hilo Technical Advisory Council, Protection of Hilo From Tsunamis (Hawai‘i County, 1962), 7.


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44 National Oceanic and Atmospheric Administration, How does the tsunami warning system work?, http://www.tsunami.noaa.gov/warning_system_works.html.


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We were driving down the road on the way to school one morning and my son Jacob says, “Mom, I don't know why I have to go to school.” I had no idea where that statement came from especially considering that Jacob is a five year old that is only in Junior Kindergarten—isn't that supposed to be a fun place to be? So then I started asking him questions, and what I quickly realized is that he believes that he knows everything they are trying to teach him. His observation and questioning skills are used on a regular basis, and I love to see his mind turning as he works out the “why” and “how” in his head. Do you know how to think? I felt secure in my ability to think until Jacob became old enough to have a conversation with me. He has reopened my eyes to the world around us. He continually questions everything I tell him while becoming more aware of his environment and the different people that are within it. As a parent I am a firm believer that children need to be presented with many opportunities to practice the critical thinking skills that are within us all. Furthermore, I feel that they should be presented with those opportunities on a regular basis in their daily educational setting. By implementing critical thinking in the early stages of learning, we build self-esteem, lay a foundation for formal education, and develop a life-long love of learning.

Arriving at a clear definition for critical thinking has been a bit difficult. The Merriam-Webster dictionary describes it as: “the mental process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information to reach an answer or conclusion.”

According to Manu Aluli Meyer Ed.D in Philosophy of Education from Harvard University, critical thinking is:

The ability to be aware of context in time through your own bias and through your own capacity. It is taking the makawalu (multiple) approach without judgment. Being quick on your feet, not closed minded, to know that you don’t know and be ok with that, to understand something in a new way every time because you are open to it.

Paige Brown, a 3rd grade teacher for over fifteen years in both public and private sectors of education believes that critical thinking is:

Your own thinking about things, the questions in your mind that you are curious about – then you use your knowledge that you have to understand the particular topic and apply strategies that you have learned to come to some type of conclusion.

With all those descriptions there seems to be a commonality amongst them that touches on cognitive skills and with further research I found that, The American Philosophical Association reported:

At the core of critical thinking are the following cognitive skills:
· Interpretation: categorization, decoding significance, clarifying meaning;
· Analysis: examining ideas, identifying and analyzing arguments;
· Evaluation: assessing claims and arguments;
· Inference: querying evidence, conjecturing alternatives, drawing conclusions;
· Explanation: stating results, justifying procedures, presenting arguments; and
· Self-regulation: self-examination, self-correction.

As I continue to analyze my information collected I now believe those cognitive skills are a great beginning but are only a small part of being an effective critical thinker and feel, regardless of the meaning, the phrase “critical thinking skills” seems to be the newest fad or buzz word in the world of education. One can only hope it will last longer than a fad since this new awareness and attention is allowing many children the opportunity to experience critical thinking as teachers respond to the newest thing in education. These skills are affording our technology savvy children the ability to examine and report on the world and their surroundings in greater context, using the World Wide Web as an enhancement and research tool instead of a crutch.

“Our world is collapsing with an ignorance taught and learned in all sanctioned institutions.” This strong statement was issued by Dr. Manu Aluli Meyer, an Associate Professor of Education at the University of Hawai‘i at Hilo. Unfortunately Hawai‘i is not escaping that detriment; unique because it is the only statewide education district in the country, it is also Hawai‘i’s only state educational agency and local education agency for federal funding purposes. This structure directly affects the status of education being offered in most Department of Education (DOE) schools. This archaic system has pushed parents to explore alternative educational opportunities for their children like private and charter school options. These sectors of education in Hawai‘i exhibit the same resiliency, creativity, and commitment that characterize the best education nation-wide.

Private and charter schools are still the minority in Hawai‘i, and while they serve a large population of students there are still many children being taught by an unbending curriculum --being expected to accept what the teachers are telling them and not to question. Dr. Meyer goes on to say that, “We are truly dumbing-down ourselves and our children with an over-emphasis on uniformity, fear, competition, measurement, comparisons, and an over-reliance on literacy.” Many DOE teachers find it easier to slap on facts for students to memorize, and then assess them with multiple choice tests. Often times slapping on the facts is the easy route because lessons that emphasize thinking require application and analysis. Such application and analysis are being executed with witnessed successes at many private and public charter schools throughout the State of Hawai‘i.

Parker School is a private K-12 education institution located in Waimea on Hawai‘i Island. Established in 1976, they provide a college-preparatory experience in a small school setting. Headmaster Carl Struges, Ph.D, says “The Parker School faculty is one I’m particularly proud to work with: committed, dedicated, and motivated…You can feel good about entrusting your children to this fine group of role models.”

Inspired by the words of Headmaster Struges, I took a visit to the 3rd grade room at Parker Elementary School to see what was being offered to the students in the way of critical thinking opportunities. Not being governed by the rules of public education, this private school has more freedom in how it chooses to reach the standards established for each grade level. I got to bear witness to critical thinking at its best while sitting in on the introduction of the collaborative social studies project for the 3rd and 4th graders. Instead of just assigning the assignment, they had the students come up with the rubric that will be the assessment of their work. The students quickly came up with things like: “Did our team work well together and stay on task?”; “Did everyone participate?” and “Did we use our time wisely?” All clear examples of
the student's abilities to employ the cognitive skills needed to be an effective critical thinker. After having the rubric somewhat designed, clearly stating what their expectations of themselves and their work would be, they were assigned to teams with a mixture of 3rd and 4th graders and then given one of the 50 States to research. Following these instructions they were given time to work as a group to start their research. During this time I heard things from the students such as: “I will look for the information for this part and you look for this stuff.” and “What is geography?” (Not a question to the teacher, but to a peer). I heard Paige Brown, their 3rd grade teacher, saying things like “Wow, look what you found out.” giving the students an opportunity to self –regulate and be proud of their accomplishments. Even when redirection was needed it was done in a way that provided thinking opportunities: “This is learning time now, I expect you to know what to do,” Brown said.

As the day was coming to a close I was amazed at how well the groups worked together and stayed on task. Even during clean-up time, Paige provides yet another opportunity for a student to practice critical thinking: a student asked where to put something and Mrs. Brown responded, “I already gave a direction for that. Take a look at what others are doing with it.” She could have given the simple answer, “On the art table,” but Paige feels strongly about providing as many opportunities as possible for her students to use their critical thinking skills throughout the day. That single opportunity allowed the student to examine, evaluate, infer, and then self regulate.

Kanu o Ka ‘Āina New Century Public Charter School (KANU) is a Hawaiian focused charter school located in Waimea on Hawai‘i Island currently serving just over 250 students from JK – 12th grades. Under the leadership of Dr. Kū Kahakalau, KANU educates in a pedagogy of “Education with Aloha” through project, placed-based learning. At each educational level thinking must be practiced in each content field and this means hard work for the teachers. Many of the kumu (teacher) of KANU have been putting in this hard work since the inception of KANU in 2000 and the results are clearly represented with the school’s annual hula drama hō’ike that the entire student body participates in. KANU has also been able to achieve a “met” status in certain years under the Adequate Yearly Progress standard. Adequate Yearly Progress (AYP) is part of the Federal No Child Left Behind Act and makes districts and schools accountable to students, parents and educators. To meet AYP, schools must meet achievement targets in reading and math, as well as graduation, attendance and test participation targets. In addition to striving for a met standard under AYP, KANU is demonstrating the schools motto of Kūlia i Ka Nu’u (strive for your highest) with the completion of a self study as a portion for the accreditation process. If approved through the process KANU will become the first Hawaiian Focused Charter School to be accredited under recognition of the Western Association of Schools and Colleges (WASC) and The Hawai‘i Association of Independent Schools (HAIS).

The day at the 6-12 campus of KANU begins with a mass traditional protocol consisting of various chants and mele. Protocol allows the students and faculty alike to get centered and prepared for the day. They ask for guidance and protection as they prepare to engage themselves in what the day has to offer--bringing openness to their minds and spirits allowing active engagement in new experiences. Once protocol is completed the students go to their learning areas based on the project group they are in. At the high school level the kumu of the Studio Kauhale Project have not given up on the critical thinking skills of the teenagers within their project and consistently provide critical thinking opportunities through a well thought out plan of experiences. Throughout the year all practices done in this group have been centered on the essential question of Pehea
lā e pono ai? How can we create a sustainable future while balancing ancient and modern practices? From this one essential question they have had opportunities for science fair projects centered around the basic concept of sustainability; a debate on global warming, and even some opportunities to witness how the practices of our ancestors and those that came before us impacts what we do and who we are today with the reading of Kamehameha and his Warrior Kekūhaupiʻo.

In addition to being held accountable by the Western measurement tools, KANU has found a way to infuse the basics into real world practical learning in and out of the classroom while consistently engaging their students. One 10th grade student reported that he is really unaware of his critical thinking skills, yet is able to take what he has learned and give a very informative tour of their new “Leadership in Energy and Environmental Design (LEED) Platinum Certified - green building” - Kauhale ʻŌiwi ʻO Puʻukapu on one day, and be an active participant in a global warming debate on another -- both of which require usage of those cognitive skills. All aspects of this learning that they are taking part in are being presented in a project-place based environment, requiring if not demanding students to not only be critical thinkers but to be critically aware as well. All of those practices combined will be witnessed in the traditional hōʻike at the end of the year through a depiction of lessons in the annual hula drama.

At the 3rd grade level the young students of KANU also begin their day with protocol. I was lucky enough to participate and bear witness one Wednesday morning. After protocol they proceed to their areas to begin instruction; I catch a small group and pose the question “Why do you do protocol?” I get shy smiles followed by surprising answers that consist of: “So we ask to enter school”; “To ask the gods for help to learn”; “It is fun and I like that I get help from the gods and kūpuna (elders) while learning everything for the day.” The project that this group is focusing on this year is Koʻu Pilina Kai - My connection to the Ocean and this theme is infused across the curriculum at every opportunity, including language arts writing pieces, art work, and science.

Amidst all the great things KANU has been able to implement under their pedagogy there is still the unfortunate aspect of being part of the statewide public school system. Which means they fall under the No Child Left Behind Act and will be measured on the successes of the student’s knowledge based on the taking of the standardized test. During my visit this left the 3rd graders practicing things they will be tested on the coming week during the standardized testing, including the memorization of flash cards.

The outpour of answers as the flashcards are turned amazes me, and although memorization can be a positive tool in certain circumstances I felt powerless and sad for the students under the control of the standardized testing that was forthcoming. The focus then takes a shift and there is excitement in the room as they review their homework from the night before. Critical thinking is happening as they try to explain how they came to the answer of each problem. This process allows them to go through the cognitive skills without even realizing it. They interpret the words into an equation, do an analysis on what needs to be done, and evaluate what they came up with. During this process I heard the students saying things such as; “I think it should be this way because”; “I did this because of this part right here”; and “Yeah! I got it right.” They were then prepared to draw conclusions, state their results, and finally make self -corrections if needed.

A 1998 study completed by Gerald Lieberman and Linda Hoody, Closing the achievement gap: using the environment as an integrating context for learning, suggests “that students learn more effectively within an environment-based context than within a traditional education framework” (2). Many charter school leaders share the ideas of those findings and have structured their pedagogy
around that. This is an ancient practice that native people instinctively know. Ancient is modern is a way of practicing what the kūpuna of the ‘āina (land) have taught us while being able to work with what the 21st century has given us. Dr. Meyer states that:

This is the kind of stuff I really appreciate about critical thinking -- the ability to retain what has worked and to critically engage in this modern society and take what works and leave what doesn’t and you have to be critically aware for that.

For many of us being critically aware is a skill that we have trouble practicing on a regular basis. Sometimes the lack of those skills comes from us being distracted. Maggie Jackson is an award-winning author and journalist who writes the popular “Balancing Acts” column in the Boston Globe. In her book Distracted she says, “As we cultivate lives of distraction, we are losing our capacity to create and preserve wisdom and slipping toward a time of ignorance that is paradoxically born amid an abundance of information and connectivity”(30). There are growing questions about how technology is changing critical thinking and how society is benefiting in an age of computers, video games, and the Internet.

As we assess the outcomes from all the inputs in our lives and engage in ways to move forward in a process to determine proper assessments of experiences guided by critical thinking we have to be critically aware of what progress measurement should look like in such an abstract environment. Are the standardized tests the best way to measure our collective evidence of knowledge? We also have to question how we choose to fill our daily schedule for maximum results and ensure that our educators have the opportunity to bring forth their critical thinking skills to enable them to instill those same skills in their students. With more than fifteen years of teaching experience Paige Brown stands firm with her belief that, “If I am not able to be a critical thinker, then I cannot teach critical thinking skills.” Brown also talks about the need and desire of continuous professional development for educators being a must.

This belief led me to examine the tools centered on critical thinking being provided to future teachers to be critically aware and engage their own skills. I was lucky enough to sit through two sessions of Dr. Meyer’s class Introduction to Education as a process for additional research, and wish all future educators could be so fortunate. After a quick introduction of myself and the project that brought me to their class I received a very quick lesson in engagement skills. Dr. Meyer called it busting yourself. After my introduction she asked her class what I was doing there and no one was prepared to offer an answer. Dr. Meyer said in a very loud tone, “We do not listen enough!” She then went on to describe the process of busting yourself and told her class they all had been, “officially busted.” Dr. Meyer also boomed, “We have enough school teachers! What education needs are educators!” I found that to be a profound statement that stayed true to the necessary tools needed to infuse critical thinking skills into education. Dr. Meyer says that your job as an educator is “to bring forth; not slap on; curriculum is actually a verb.” The second session consisted of an introduction to juggling and demonstrations on how to become an entry level juggler. Dr. Meyer promised everyone they would leave there being able to do the simple “outside x” pattern of juggling. I had my doubts about myself, but low and behold once I got three released I was well on my way. Talk about being critically aware! Juggling requires continuous awareness and forward thinking for what is coming next. For me this was one of those “ah-ha” moments you tend to get in life. One: make sure you have the right tools -- you are not going to juggle with knives right out of the gate. Two: be prepared to fail -- you will at some point drop your tools. And three: know what you have in the air so you are prepared to catch it. That awareness that
Dr. Meyer provided through experience -- not words -- was a great tool for future educators to have in their tool boxes and because it was an experience they had they will have greater reflection on what they got out of it. My observations were experiences in active education and a chance to evoke some critical thinking skills of my own. My knowledge of critical thinking skills continues to evolve as I analyze what I have heard and read.

Bryce B. Hudgins and Sybil Edelman from Washington University wrote Teaching Critical Thinking Skills to Fourth and Fifth Graders Through Teacher-Led Small-Group Discussions. In this article published in the Journal of Educational Research they discuss the common method of instruction used in many classrooms. “Direct instruction, which is the current label usually applied to didactic, whole-group teaching, remains the dominant mode of instruction in classrooms” (334). The article labels this method as “effective in achieving basic educational objectives such as the transmission of knowledge and information” (334). This direct instruction method paired with the unbending curriculum has been the cause of the stagnation in our public educational system for decades. What I am coming to realize is that there is a large gap in the skills needed to be a critical thinker, and those that are accessible to our children which is not being filled with results from the No Child Left Behind Act of 2001 and the mandate of standardized testing. Unfortunately there are not enough available spaces in the alternative choices of education like the private and charter schools who more widely offer situations to learn and practice those skills. Therefore it is time to come together as a people, as a community, as a movement. It is time to reclaim our minds and the minds of our children. It is time to say that we will no longer be subjected to standardized test results as the primary evidence of our intelligence or progress. The very irregularities and variations that the word “standardized” removes are the characteristics that make up who we are as individuals. We need to come together and unite in a way that will embrace our differences. In my interview with Dr. Meyer she spoke of Jiddu Krishnamurti and cited this quote by him “It is no measure of health to be well adjusted to a profoundly sick society.” I found that statement to be extremely meaningful with regard to education and standardized testing.

Although critical thinking may be hard to define with a single definition, what stays true throughout the different interpretations is that critical thinking involves allowing your mind to be open and active to new things as you think. That is not always an easy task. The article Taking Critical Thinking Outdoors, written by Mary S. Rivkin, Ph.D, who is an associate professor of early childhood education at the University of Maryland, Baltimore County, reminds us that, “When you remember to see the world through the child’s eyes, you become a first-rate guide” (2). In order to invoke our “child’s eyes” we must rely on sources deep within ourselves. To ensure that our children and the minds yet to come get to experience critical thinking in the “classroom” we must rely on the charter schools that are bringing change to public education and the private institutions that continue to stand strong as an alternative to that system. Furthermore the educators in the classrooms must unite and insist on a permanent spot in educational institutions across the board for critical thinking.

We were driving on the way to school one day and I said, “Jacob have you thought more about why you should be going to school?” Jacob replied with a laugh and then said, “Because maybe they might teach me something I don’t already know.” I could not end this work any better than how Theodor Seuss Geisel, better known as Dr. Seuss ends one of his best-selling children’s books “Think left and think right and think low and think high. Oh, the THINKS you can think up if only you try!” (38)
Author’s note:
This paper was written in April 2010 and KANU has since received a multiple year accreditation status from both WASC and HAIS.

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Discrimination is an unfortunate but irrefutable fact within societies. It is an extreme, negative manifestation stemming from individuals who desire reverence from others. Attention that is hyper focused on differences generates stereotypes, inequalities, and tensions among society’s members. The result is a hierarchy of social order often consisting of sharp contrasts of opinion. This disparity is extremely apparent in the Christian/Jewish dichotomy. During the sixteenth-century in Europe, anti-Semitism was the dominant ideology in a society that regarded Christianity as superior. Notions of Jewish identity and moral fiber through the eyes of Christians relied on villainous stereotypes that dehumanized Jews and rendered them unworthy of coexisting with Christians unless they were willing to abandon their religion and convert to Christianity. Shakespeare’s play, The Merchant of Venice, illustrates how Jews in European society were marginalized. It is a brief glimpse into the common creed of the time in which the play was written.

Unlike sixteenth-century Christians, Jewish people did not have a permanent place to call their own. Once claiming Israel as home, their country had been invaded and conquered throughout history leaving them to wander Europe and the Middle East and establish precarious communities in between bouts of displacement (Koenigsberg). Consequently, Jewish people were vulnerable to the malevolence of their Christian hosts. In Spain, The Inquisition that had begun in the previous century was still active. This “royal agency” was an aggressive faction appointed by King Ferdinand and Queen Isabel to identify and convert followers of Islam and Judaism. If they could not be converted, they were punished by imprisonment, hanging, and often burnt alive (Bentley 384). Not only was it unsettling to be Jewish, in some cases it was a death sentence.

This kind of animosity was the culmination of many myths regarding Jewish people that Christians held as truths. After the denial and crucifixion of their savior in 33 A.D., resentment ensued and intensified among the Christians toward Jews. This shaped an enduring Christian sentiment that Jewish people were “subhuman” (Mamet 12). It became embedded in the minds of the Christians that Jews were villainous, rotten creatures by nature. In fact, “the treatment of the Jews as vampire” was widely held; Christians maintained that Jews regularly kidnapped Christian children in order to circumcise them, sacrifice them, and drink their blood (Mamet 12). In 1290, this kind of paranoia led to the Expulsion of the Jews which forbade any Jew to reside in England (Shapiro 4). The deportation effectively reduced the Jewish population “to somewhere around 2000” (Shapiro 46). What began centuries before had ramifications that lasted well into the sixteenth century, and Jews were not officially declared to have legal readmission back into England until 1656 (Shapiro 46).

Once Jews were permitted to reside in England once again, they worked as moneylenders. Money lending was regarded as abhorrent work, and it was “absolutely the only profession open to the Jew” (Abrahams
In the sixteenth and seventeenth-centuries, England did not have an established banking system that provided savings plans or personal loans. Paper currency and a regular system of credit had not been implemented yet either (McMurtry 80). As a result, anyone who needed to borrow money did so via Jewish moneylenders. The lenders would charge interest on top of the original amount loaned to the borrower, much in the same manner of a modern day credit card. This activity was called usury. According to Christian analysis of the Bible, it was against Christian code for Christians to charge each other interest but perfectly acceptable to be charged interest by Jews (McMurtry 80). “Unto a stranger thou mayest lend upon interest; but unto thy brother thou shalt not lend interest” (Deuteronomy 23:20). Author Jo McMurtry analyzes how the association between Christians and Jews in regard to money lending:

Upon examination one finds that this interpretation depends on a somewhat twisted logic. In Exodus 22:25 and Deuteronomy 23:19, Jews are forbidden to lend money “upon usury” to fellow Jews but are allowed (in Deuteronomy) to enter such transactions with “strangers” interpreted as Christians, although an Old Testament text could hardly be specific about this particular type of stranger. Neither passage goes into what kind of loans strangers are allowed to make with each other. (81)

Despite its convoluted reasoning that leaves many questions unanswered, this interpretation endured and Christians and Jews structured their lives accordingly. Thus, Jewish people became the designated lenders Christian borrowers turned to. This pigeonholed Jews and agitated Christians by design because it required Christians to not only interact with Jews, but also to depend on them for financial purposes. Christians became increasingly disgruntled with the notion that a “despised people” could accrue wealth, especially through a manner the Bible criticized in any way (Halio, Understanding 25). Christians also became convinced that they were being unfairly charged exorbitant interest by the Jews, victims of Jewish “ill-gotten wealth” (McMurtry 147). Thus, usury and all its connotations caused immense tension and animosity between the two groups.

In Venice, Italy it was common for Jews to practice usury openly despite Christian backlash. Venice was quite different from England. It was regarded as a refined, innovative, powerful, wealthy, liberal city that tolerated lowly classes such as the Jews. Venice’s liberal attitude allowed Jews to make a living much more comfortably than they had in England. The Venetians would ignore the negative implications of usury allowing lending arrangements to transpire openly. Yet even in Venice, Jews were forced into ghettos by law. The ghettos were located along the outer boundary of the city and equipped with gates that were locked and guarded at night (Halio Understanding 23-25). Jews were effectively “in the city but not of it” (Yaffe 25). Also, Jewish moneylenders were often spat upon and verbally attacked in the streets of Venice by disapproving Christian citizens. In an exchange between Antonio and Shylock in The Merchant of Venice, Antonio, a Christian, seeks to borrow money from the Jewish Shylock. With a newfound shift of power Shylock retorts:

Signior Antonio, many a time and oft
In the Rialto you have rated me
About my moneys and my usances:
Still have I borne it with a patient shrug,
For sufferance is the badge of all our tribe. You call me misbeliever, cut-throat dog, And spit upon my Jewish gabardine,And all for use of that which is mine own

(I.iii.103-109).
Sixteenth-century Europe, including Venice, was simply unable to allow Jewish people to live and thrive peacefully. Stereotypes and animosity toward Jews were so pervasive, there was nowhere for the rogue Jew to exist. The only way the Jew could obtain salvation in the mind of the Christian was through conversion. The sixteenth century marked the beginning of an eager Christian movement in England to convert Judaic followers. “This demand was met in part by the idea of the stubborn Jew whose conversion not only revealed the truths of Christianity in general but also... the rightness of their own particular beliefs” (Shapiro 134). The campaign included pamphlets such as Light for the Jews, or the Means to Convert Them and books such as The Converted Jew began circulating Europe (Shapiro 133-138). Additionally, it was popular Christian opinion that a Jewish woman despised her heritage and actually preferred conversion. She longed for “nothing more than to be rescued from her cultural fate by some handsome Christian” (McMurtry 147). In The Merchant of Venice, Jessica, the Jewish daughter of Shylock, is in love with the Christian Lorenzo and desperate to denounce her faith and replace it with that of her beloved. She confesses aloud:

Alack, what heinous sin is it in me
To be ashamed to be my father's child!
But though I am a daughter to his blood,
I am not to his manners. O Lorenzo, If
thou keep promise, I shall end this strife,
Become a Christian and thy loving wife
(II.iii.16-21).

Jessica exemplified the stereotype that Jewish women were anxious to abandon their Judaic values lest they sacrifice the Christian men they worshiped. It also conveyed the message that in order to be vindicated one must be happily converted. When Shylock’s plan to seek revenge on Antonio turns on him and he is forced into Christianity, it is with dissonance. This is indicative of the philosophy of the time: a Jew must either adopt Christianity willingly and prevail (like Jessica) or live as a despondent Jew who eventually converts anyway (Shylock).

Despite all the aggressive ventures on behalf of the Christian ideologies, the Jews were not eradicated. The conversion thrust upon them by Christian propaganda was unsuccessful. As a result, Jews ensured that their religion, values and people did not succumb to the hostile European climate in the sixteenth and seventeenth centuries and beyond. This survival enabled their legacy to continue to live on. The tenacity of this outcast race leaves a lingering question worthy of consideration: can two opposing religions ever be mutually exclusive when it is the conviction of their genuine faith that allows them to persevere?
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Ocean Acidification: Cause, Effect, and Potential Mitigation Approaches
Joanna M. Norton

The accumulation of carbon dioxide in Earth’s atmosphere is mirrored by an increase in dissolved carbonic acid in the oceans. Carbon dioxide dissolves easily into liquid, so the surface layers of the ocean are always in equilibrium with atmospheric pressures of the gas and provide a massive sink. Some of the dissolved carbon dioxide remains as carbonic acid, some breaks down further to form carbonate ion, but most is present in the form of bicarbonate (HCO3-); these are the components of the ocean’s buffering system to guard against pH changes. However, the buffer can be overwhelmed by continued inputs of carbon dioxide and lose its buffering capacity. The addition of carbon dioxide to the ocean is already causing a rise in acidity, which will have an increasingly negative effect on ocean ecosystems and processes if left unchecked (Jeffree, 2009). Researchers have begun investigating not only the effects of this acidification but also methods of potentially neutralizing it. Because rising levels of carbon dioxide are always equilibrating with ocean levels, and any changes made to individual ocean areas will eventually affect the entire ocean, mitigation efforts will involve massive alteration of ocean chemistry. Predicted effects of ocean acidification and proposed methods for its mitigation are examined here.

The lowering of oceanic pH levels has begun, and preliminary research indicates that the effect on marine organisms will be dire. Organisms that form shells or tests out of calcium carbonate could be among the first victims of acidification, as more acidic waters pull carbonate out of calcium carbonate structures and back into solution. Current pH levels of the ocean are 0.1 unit lower than in preindustrial times, and modeling based upon the business-as-usual emissions predictions made by the Intergovernmental Panel on Climate Change (IPCC) of the United Nations indicate that the Southern Ocean could become undersaturated for aragonite (a form of calcium carbonate) by the year 2050 (Orr et al., 2005). Furthermore, Caldeira and Wickett (2003) predict that this same emission regime will result in pH levels decreasing by 0.7 units within the next few centuries. This pH change is greater than any on geological record for the last 300 million years. Needless to say, no population alive in the ocean today has had a chance to evolve coping mechanisms for a pH shift that large, so the extent of potential ecosystem disturbance is entirely unknown. Researchers have simulated predicted levels of ocean acidity in experimental tanks to begin to address this question. Orr et al. (2005) found that after two days in a tank with carbon dioxide added to approximate levels in the year 2050, live high-latitude pteropods experienced substantial shell dissolution. The research team questions whether any high latitude pteropods could survive this environment. In some Antarctic regions pteropods account for a majority of all carbon export from the surface, so an extinction of this type would upset the whole base of the food web in these areas, as well as eliminate the carbon sequestration that is done by these species. Experimental evidence indicates that low-latitude corals and phytoplankton that form calcite tests would also be negatively affected by pH changes of this magnitude (Orr et al., 2005). Jeffree (2009) finds that reproductive success in animals that do not form shells, such as cuttlefish and seabream, also decreases with acidification.
One mitigation approach suggested by researchers involves sequestering carbon on the ocean floor by fertilizing certain ocean regions with iron, which can be a limiting nutrient in these areas. Pollard et al examined an area of the Southern Ocean with high nutrients and low chlorophyll (HNLC) and found that influxes of terrestrial iron led to rises in primary productivity (Pollard et al 2009). The resulting phytoplankton blooms produce more carbon-containing molecules that then travel through carbon flux and sink down to be sequestered on the sea floor. The observation of this phenomenon has led to proposals from private industry to utilize iron fertilization as a carbon offset on a global carbon market. A review of this plan's effects and side effects is therefore of timely importance (Cullen & Boyd 2008). Cullen and Boyd enumerate the main points of iron fertilization: it will increase primary productivity in areas of the ocean where large amount of macronutrients are currently unused, and thus send more organically-formed carbon-containing molecules down into the depths of the ocean where they are sequestered as particulates. Along with this intended result, these will also occur: macronutrients will be collected in the deep ocean with carbon, and become unavailable downstream in the nutrient flow from the site of iron fertilization; and oxygen levels at mid-level depths will decrease as heightened levels of organic material decompose, and release CO2. Iron fertilization could have negative feedbacks that lessen some of the carbon capture, and could negatively effect ocean ecosystem functioning (Cullen and Boyd 2008).

The addition of powdered limestone to ocean water to react with carbon dioxide and form bicarbonate has also been proposed (Rau and Caldiera 1999; Harvey 2007). This would neutralize the acidity of the added carbon dioxide, as well as push the oceanic carbon equation towards carbonic acid and allow for more calcium carbonate to stay undissolved in the shells of marine life. The ocean has a large, untapped ability to hold dissolved bicarbonate, if enough calcium carbonate (limestone) is made available for the reaction (Rau et al 2006). This process would essentially increase the buffering capacity of the ocean, by adding carbonate ion to offset the carbon dioxide absorbed by the ocean. Rau et al (2006) calculate that the ocean could hold enough bicarbonate that all the carbon in existing fossil fuel stores could be sequestered. In fact, this is how past rises in atmospheric carbon were eventually modulated, gradually, over millennia. They suggest accelerated weathering of limestone at locations of CO2 production. Harvey (2007) investigates adding powdered limestone to areas that would carry it in upwelling current. This method could be especially cheap and effective, and no negative side effects have been found, but these issues have not been thoroughly examined.

Just as ocean acidification has implications for primary and secondary ocean productivity, so do the mitigation ideas mentioned above. Doing nothing to reverse carbon acidification of the ocean will alter productivity, with decreases in some species experimentally shown (Orr et al 2005, Jeffree 2009). Addition of iron changes levels of primary productivity at the site of introduction, and could possibly lead to a massive increase in total ocean productivity (Pollard et al 2009). Addition of limestone might protect productivity of biota that build calcium and aragonite shells (Rau and Calidiera 1999). Secondary effects on the ecosystems where productivity decreases are entirely unknown, and nutrients left unconsumed will eventually be found by species that can exploit the new situation. An interesting secondary effect of heightened levels of carbon has been found by Riebesell et al(2007): not only do elevated levels of carbon raise overall photosynthetic activity, but carbon is utilized up to 39% more while consumption of other nutrients remains even. The researchers conclude that this flexibility of primary producers has already mitigated about 10% of the effects of the rise
of carbon dioxide.

More than one way to mitigate the build-up of acidifying carbon dioxide in the world's oceans has been proposed. Addition of limestone or iron fertilization might prove to be appropriate responses; however, the global nature of the problem means that potential solutions must also be global, and will have profound effects on ocean chemistry and biology. This inspires caution, although some researchers ask how much caution is merited in regards to mitigation proposals when the predicted accumulation of oceanic carbon is poised to set off such drastic alterations in marine ecosystems (Jeffree 2009). Whether mitigating efforts are undertaken or not, ocean chemistry is changing.

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Land Tenure and its Effect on the National Park system: A Cross Comparative Study of American Sāmoa and Sāmoa

Genell Howell

Introduction

Land tenure greatly affects natural resource management within the national parks of the Sāmoan archipelago. This paper’s primary objective is to cross analyze and compare theses differences in both American Sāmoa and Sāmoa. Although the Sāmoan archipelago is geographically and culturally similar, it remains politically separated with two land tenure systems operating in the region; the first is a traditional practice of communal land and the second, more recent method of privatized land that began with colonialism. Included in this paper is the impact of the land tenure system on management plans within the national parks. The findings of my research include a limitation on the buildup and continuation of subsidence agriculture in the national parks located on customary land, and a more aggressive management and recreational utilization on privatized land.

Background section

Geographical history of Sāmoa and American Sāmoa

The Sāmoan Archipelago is comprised of 13 volcanic islands, 9 of which are inhabited, and 2 atolls located 14 degrees south of the equator in the Pacific Ocean. The archipelago is oldest to the northwest at the island of Savaii and decreases in age to the southeast at the island of Taʻu (Craig, 2009). These islands are basaltic in nature and contain an intricate network of coral reef systems throughout their near shores. The natural vegetation on these islands consists mostly of lowland and montane rainforests with smaller patches of habitat that are categorized as cloud, riverine, swamp, mangrove and beach forests. According to Schuster, the primary conservation areas are montane rainforests as they are rich in endemic flora and fauna and have high rates of biodiversity.

Political History of Sāmoa and AS Uanas Va’a, a professor at the Sāmoan University, describes Sāmoa as, “One nation with two separate flags.” Though the islands are politically separated they are similar in traditions, practices and share both a common language and culture which varies in degrees and intensity. The islands of Sāmoa have historically had division and turmoil which sometimes resulted in island-to-island warfare; this was compounded by the Treaty of Berlin in 1889 and the inception of colonialism (via the Tripartite Convention) in 1899. This accord separated the island chain with the islands of Savai’i and ‘Upolu under the colonial rule of Germany and later New Zealand, while
the island of Tutuila and the Manu’a islands came under the colonial power of the U.S. This division afforded Sāmoa a land area that is fifteen times larger totaling 1,099 sq miles, as opposed to its counterpart of American Sāmoa which totals 77.1 sq miles (Craig, 2009). Sāmoa received its status as an independent nation in 1962, while American Sāmoa is still subject to the colonial rule of the United States as an unincorporated part of the U.S. (Schuster). A strong variance that occurs between the Sāmoas is found in their economic infusions; while American Sāmoa is underneath the wing of the US government and receives a variety of grants and stimulus packages, Sāmoa, due to their independent status, must self govern and write a variety of proposals and grants in order to supplement the revenue generated from tourism.

Land Appropriation

In the Sāmoa islands land tenure is considered an integral portion of the social organization tied to a kinship system and village network (Stover, 1999). Communal tenure refers to the rights of the environmental resources, while the lands and waters are held in common. These land rights belong to an ‘aiga, or extended family, and are overseen by the appointed matai, or chief, within that ‘aiga (NPS and ASG, 1987). According to an article by Stover, there are two concepts that support the matai in their decision making process over the land usage. The first is the pule, otherwise known as authority, as the matai has exclusive power to make administrative decisions over the family lands. The second is the tautua, otherwise known as service, which refers to the obligations of the matai to their ‘aiga (1999). Uanasa Va’a stated that ninety percent of the land in American Sāmoa is considered communal under the matai system, while a total of eighty percent of land in Sāmoa is customary (Division of Environment and Conservation, 1998). This separation of land tenure is substantially important when comparing the national parks in the Sāmoas as they are contained on two different types of land that could potentially add to the restrictions of the management plans in the park. In Sāmoa the parks are located on government owned lands, whereas in American Sāmoa the parks are located on customary lands. Stipulations of the customary lands in American Sāmoa are based on a 50 year lease that was signed in September of 1993 between the governor of American Sāmoa, who was acting on behalf of the village landowners, and the NPS (NPAS, 1997).

Management differences between the National Parks

Sāmoa

As reported by the Conservation International there are a total of five national parks in Sāmoa; two are on the island of ‘Upolu, totaling in 11,613 acres, and three are located on the island of Savai’i which accounts for a total of 28,640 acres. The first National Park, O Le Pupu Pu’e, was established in 1978 and is located on the Southern portion of ‘Upolu (Division of Environment and Conservation, 1998). As stated in the National Parks and Reserves Act of 1974, the purpose of a national park is to ensure the preservation and “the benefit and enjoyment of the people of Sāmoa” (2008). This Act also asserts that the benefits of the park range from inspiration, aesthetic appreciation, enjoyment and recreation. Within the park, management has elected the right to alter roads and tracks, set aside camping and picnic areas, vehicle lots, authorize the construction of permanent buildings and structures, perform maintenance, provide a place for scientific and archeological research and lastly to implement the incorporation of interpretive signs, which educate, instruct or guide visitors (MNRE, 2008). In recent years there has been a push from the Ministry of Natural Resources and Environment (MNRE) towards the preservation and conservation of the biodiversity within the natural areas, and
as a result new rules and regulations have accompanied the way that the parks are managed. For instance, huge efforts are being made in order to ensure the conservation of watersheds, reforestation of the national park, and the eradication of harmful invasive species that may degrade and threaten the rehabilitation of conservation areas (MNRE, 2010).

American Sāmoa

According to American Sāmoa’s Natural History Guide, the national parks in American Sāmoa total 10,520 acres on the islands of ‘Ofu, Ta’u and Tutuila (Craig, 2009). This amounts to a total of three national parks with one park on each of the aforementioned islands. The park on the island of Tutuila consists of 2,500 acres and is located on the north central part of the island. The boundaries comprise all land that is 200 ft and up in elevation following the Mt. Alava/ Maugaloa Ridgeline. On the island of Ta’u the park encompasses a total of 5,400 acres and includes the southeastern portion of the island. Finally, the park on ‘Ofu makes up a total of 70 acres of both sandy beach on the southern shore, a transit corridor, and the southern slopes of the Sunu’itao Peak (NPAS, 1997). The management objectives of the national park are to preserve and perpetuate the cultural integrity and natural resources within the tropical rainforests including the plants, animals, waters, soils, topographic features, geologic features, air quality and scenic vistas. As stated in the General Management Plan issued by the NPAS the purpose of a national park is to:

Preserve and protect the tropical forest and archeological and cultural resources of American Sāmoa...to maintain the habitat of flying foxes, preserve the ecological balance of the Sāmoan tropical forest, and, consistent with the preservation of these resources to provide for the enjoyment of the unique resources of the Sāmoan tropical forest by visitors from around the world(1998).

While there has been some build up in the parks in the form of trails and signage there remain very strict regulations set by the management plan that prohibits the construction of new structures and roads in the park. Furthermore, based on the lease stipulations, subsistent agriculture that had occurred in areas that now fall under park jurisdiction can continue, however not expand (NPS and ASG, 1988).

Methodology

The methodology used and implemented within this research project consisted of participant observation in the National Parks headquarters and the National Parks of both American Sāmoa and Sāmoa. The participant observation was performed in order to ground truth already preconceived notions regarding research questions. The consultation of a variety of scholarly journals and government-assessed proposals regarding the management and implementations of programs within the Park systems was carried out. I also conducted informal interviews/consultations with a total of 6 individuals within the National Park systems. This informal interviewing allowed me to gain knowledge and insight regarding the implementation of a variety of management policies by the administrators and workers in the National Parks.

Discussion

In the following section I will discuss my overall findings and conclusions based on all of the information gleaned through my research. This section has been broken down into a total of three sections; the first focuses on the findings in Sāmoa National Park and is further broken down into subsections for each island visited. The second section consists of findings pertaining to American Sāmoa National Park and is further broken down into 3 subsections for each island visited. The final section focuses on the limitations presented...
over the duration and analysis of this research process.

Sāmoa
Savai’i
On the island of Savai’i there are a total of 3 national parks that amount to an area greater than on any other island; however, the parameters of the parks and common knowledge of their whereabouts is vague and unidentifiable (refer to map 2 for specific locations). Our guide on this island, Warren Jopling, took us on a nature-guided tour of the island where we were able to visit preservation lands that would be in similar condition to the national parks on this island. The largest issue present was the damage incurred by the 1990 cyclone Ofa and the 1991 cyclone Val. The overall detrimental effects of these cyclones severely impacted the population of the flying foxes, reducing their numbers from the thousands to under a hundred. In addition, the cyclones caused a substantial loss of canopy cover which allowed the successive invasive species Merremia and mile-a-minute vine, or fue, to disperse widely and negatively impact native vegetation. This is extremely detrimental as the fue covers the native biota and prohibits the secondary regeneration of native vegetation. The final issue that was present in the national parks and preservation lands on this island was the infringements by the local population in the form of subsistent farming and resource utilization. This is a huge problem on this island as the parks’ boundaries are poorly defined and the continuation of native indigenous practices is hard to limit or control. According to the MNRE’s Annie Mauga, the national parks are areas that were once utilized for agriculture when the policy was that of sustainable utilization of the land; however in recent years the lands have been re-appropriated to the Department of Forestry with the focus of conservation thereby prohibiting any additional further use of the land by the local community.

‘Upolu
The island of ‘Upolu has a total of two national parks that account for 11,613 sq acres. According to Annie Mauga, the Planning and Policy officer with the forestry division at the MNRE, funding for the National Parks came through international agencies such as FAO, UNDP, JICA and the MNRE. Annie reaffirmed my findings that the national parks within Sāmoa are placed on government owned lands and therefore are able to utilize the land to different degrees and impose stricter policies on natural resource use as opposed to the ASNPs. The O Le Pupu Pu’e National Park is in the shape of an ahupua’a and covers the land from mountain to sea. As a result of its shape it spans a variety of ecosystems and encompasses a montane and lowland tropical forest (refer to map 2). The most striking dissimilarity between the park systems is the implementation of a visitor center in the national park. This center allows for visitors to sign in and receive information regarding the programs that are implemented by park rangers on behalf of the MNRE in addition to providing a visual representation of the park itself. The trail systems are standard hiking trails bordered with planted ginger, an invasive species and vegetation.
that was chosen strictly for its aesthetically pleasing nature as opposed to its endemicity. Permanent structures in the form of parking lots, roads, picnic tables, fales, barbeque pits and a fallen tree jungle gym were present in the park. While hiking we crossed the paths of 3 other visiting groups, one of which were jumping into the swimming area and drinking alcohol. These observations combined to produce the conclusion that the national park in Sāmoa is utilized as a tourist destination, and much more recreational use occurs here than in the ASNP. An informal interview with Loto, the head ranger of the park, revealed another startling difference; as a government employee he has job security, a full benefits package and housing provided from Monday through Friday. This is strikingly different from American Sāmoa as their employees are contracted and receive a stipend on a per day basis with no job security. According to Loto the main focus in the park is the maintenance of the trails and the removal of invasive species, specifically the removal of fue, the climbing invasive plant. As reported by Steve Brown, the Assistant CEO at the Ministry of Natural Resources and the Environment Services, there is a prevalent issue currently in the national parks in regard to boundary identification as fences and parameters of the park are either vague or nonexistent. As a result of this issue cattle or subsistent farmers from surrounding villages encroach on the parkland and degrade or utilize the natural vegetation.

**American Sāmoa**

**Tutuila**

On the island of Tutuila Peter Craig, the head marine biologist for the national park, informed me that the primary purpose for the national park system is not only to protect the natural resources of the park, but the cultural traditions as well. The cultural component is addressed with interpretive signs in the park that pertain to culturally relevant traditions within AS such as weaving, or signs that emphasize culturally relevant sites. According to Craig, as a result of budget limitations the park is limited to 10 permanent staff and a total of 40 VIPs (volunteers in the park) within the entire ASNP system. The purpose for the VIPs is to maintain park areas and remove invasive species. At the current time the primary project for the VIPs is the removal of the invasive species tamaligi palagi, otherwise known in Hawaii as Albizia. The removal of this large tree is labor intensive as it involves the girthing of the trunk and traversing steep terrain. The VIPs in the park are contract employees whom earn a stipend amount of $25 per day. As reported by Craig they are usually short-term employees whom are hired on a project-by-project basis. This is dissimilar to the government-employed workers found in the Sāmoan system. The visitor’s center, while in a temporary location due to the damage incurred by the tsunami, was very different from the Sāmoan visitor’s center in the fact that it is located outside of the park. However, both visitors’ centers provided similar information pertaining to hiking trails, maps of park boundaries, current projects that the national parks are working on, endemic flora and fauna found in the parks, and culturally important traditions of American Sāmoa. After speaking with Sarah Fone, an interpreter and manager of the ASNP, I identified the transient nature of the staff within the parks higher echelons. Sarah has been with the park for a total of 1 year, and based on our discourse she seemed disconnected from the cultural traditions of American Sāmoa. The turnover rate was further described to me by Epi Suafoa, an archeologist who worked for 17 years with ASNP. She informed me that during her tenure the position of superintendent changed hands five times. All of the superintendents were palangis (foreigners) from the mainland of the U.S. and were accustomed to a very different way of working with the local community as opposed to embracing the traditional customs in American Sāmoa. While it is a part of the ASNP policy to preserve and continue the tradition and culture of American Sāmoa
I can argue that it is unfeasible that the amount of turnover seen in the park system would ensure the fairest objectivity, and that cultural practices are beings followed and utilized. According to park officials many of the limitations exist due to the land tenure situation. The land is leased to the government from the local villages for a total of 50 years with the option for either party to cancel or opt out of their lease with one year’s notice. As a result of this uncertainty of park stability the implementation of permanent structures in the park is not viable.

Map 3: National Park of American Sāmoa. Tutuila Island, American Sāmoa

On the island of Tutuila the national park is located on the northern side of the island (refer to map 3). The hiking trail for this park is the Mount Alava Trail which follows the Maugaloa ridgeline overlooking the Pago Pago harbor. The trailhead is located on the Fagasa Pass and the parking lot is merely the side of the road. The park is noted by a sign which contains some interpretive information pertaining to invasive species removal education as well as cultural components such as women weavers and a map that depicts the terrain and the trail distances. The trail is a 4x4 standard trail that is a remnant of a service road that allowed for the TV station to gain antenna access at the peak of Mt Alava. There seems to be little to no build up of this trail. According to the General Management plan the trail extends after the peak of Mt Alava down to the village of Vatia. This once again followed a previously established trail following the ridgeline that was initially created to provide access for subsistent farming and passage for the local villagers who inhabited the ridgeline. Staying true to the management plan there is noticeable subsistent farming that occurs on the side of the trail. The subsistent farming that occurs in the ASNP is all in accordance with the lease agreement and based on the land tenure system. While the habitat the NP is preserving is ecologically fragile the agreement stipulates that traditional farming that was already in the area of the parks at the signing of the lease can continue, however not expand. While hiking the trail we failed to cross the path of any other person. This was extremely different from the observations of Sāmoa where we crossed the path with not only workers of the park but also several tourists. This reaffirms the fact that the parks in Tutuila see substantially less tourists as opposed to those of Sāmoa. The trail also reaffirms the commitment of the park to ensure that the conservation of the rainforest is the most important purpose as no additional buildings or facilities on the park grounds exist that would contribute to the degradation of the fragile ecosystem.

Taʻū

The National Park visitor’s center in Tutuila provides information regarding the parks on the Manu’a islands and home stay opportunities as there are no accommodations on the island of Taʻū. These islands are remote and located 60 miles south of Tutuila and require traveling on a small plane in the interisland air fleet. This tyranny of distance is personified through the extremely pristine condition of the parks on these islands as they receive very few visitors. On the island of Taʻū the park consists of the entire Southern portion of the island and over half of the island’s mass (refer to map 4). While in Taʻū I consulted Mauga, who has been the head VIP for the area for a total of 15 years. According to Mauga this park has a total of 3 VIPs who care for it. Their primary focus is the
maintenance of the park and trail building. There is one main trail in the park that is again in the form of a reclaimed 4x4 all access road that extends down the eastern side of the park bordering on the coast. The entrance to the park is identified with a main sign and contains a handful of interpretive signs pertaining to the flying foxes, native biota and a cultural sign explaining the significance of the Saua archeological site. On the side of the trail is a 1000-year-old stone foundation and remnants of a village. The entire park is extremely pristine and seems to have had little impact from the cyclones of 1990s. Mauga stated that they are currently working on a trail that leads to a waterfall; however, this knowledge hasn’t been updated on the NP map and in order to access any other part of the park a guide is needed. This observation runs true with the conservation methods and vision of the purpose of the park, reaffirming the fact that it was established in order to conserve the natural biota and that only minimal buildup would be permissible within the grounds. The final piece of information that I found interesting was the lack of monetary payments for the services rendered by Mauga who has used his personal vehicle for the last 15 years and is the person in charge of managing the maintenance of the park on the entire island. Even though he has a huge responsibility he is still considered a VIP and contract employee. Apparently he is to report to the ranger on ‘Ofu, Darin, who hasn’t visited the park of Ta’u except once his entire career. Based upon my analysis this reasserts the huge divide that occurs in the national park of American Sämoa between the local workers and the transient administration.

Map 4: The national park of American Sämoa. The Manu’a Islands

‘Ofu

The island of ‘Ofu is a part of the Manu’a islands and is only accessible by chartering a fishing boat for the hour journey that traverses a total of 10 miles from Ta’u over open ocean. As a result of its inaccessibility it remains beautifully pristine. On this island there is a park ranger’s home for the national park in Va’oto and a total of 70 acres of terrestrial park that encompass the southern shoreline and Sunu’itao Peak (refer to map 4). The ranger Darin is in charge of maintenance and preservation of both of the Manu’a islands. While I was unable to attain an interview with him I did find that he has been stationed on the island for a total of 6 months and that he is already planning a transfer to another location within the National Park System. This reaffirms the findings that the administrators and permanent staff of the park are inconsistent and transient in nature, and as a result would have a narrower scope in regards to park management. Without regard for indigenous cultural traditions and belief structures they impose mainland procedures and processes in situations where it is considered culturally deficient and incorrect. While walking along the unpaved road of the southern side of ‘Ofu there is a sign that denotes the entrance of the national park. Aside from an interpretive sign pertaining to the coral biodiversity located in front of the ranger’s home there were no interpretive signs that denote the cultural relevance or the park allocation as were present in all other parks.
on each other island. The Sunu‘itao peak is able to be traversed on a standard hiking trail that borders the shoreline. All of the building, including trails and roads, remains consistent with my findings regarding the limitations of build up in park areas. According to park officials many of the limitations exist due to the land tenure situation.

Limitations

The limitations of this research project consisted of restrictions in the intensity of scope, time and positionality. While the entire trip was substantially beneficial in order to ground truth previously held notions and assumptions regarding the effects of the land tenure on the national parks, the time allotted specifically to the project while in the field was limited. I also believe that my positionality affected the viability of the paper as it is from the perspective of an outsider as opposed to a native Sāmoan. It is my belief that this project would be greatly enhanced with additional fieldwork and observational analysis within both of the Sāmoas in addition to the incorporation of additional subjects varying from indigenous species to the effects of economic disproportion. While I performed numerous informal interviews and held conversations with individuals tied to the national parks I would have liked to track down Darin on ‘Ofu. It is my belief that this paper would have been greatly enhanced if the schedule had allotted for extensive time intensive research within each of the National parks within both Independent and American Sāmoa. I believe that the work performed was adequate for undergraduate level research; however, the topic could be expanded to a master’s thesis or PhD dissertation with the incorporation of additional research and topics addressed. This paper, though limited in its scope, merely scrapes the surface of the topics addressed.

Conclusion

Based on the research conducted I found that the National Park System and management greatly differ from American Sāmoa to Sāmoa primarily due to land tenure issues. Both parks are focused on a variety of programs that deal with the preservation and conservation of the natural habitat and fauna. However, dissimilarities included the utilization of the land by the local community in regards to subsistence agriculture and cultivation in addition to the buildup of structures on the land.
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National Park of American Sāmoa. Tutuila Island, American Sāmoa


The National Park of American Sāmoa. The Manu'a Islands
Appendices

Informal Interviews or discussions
These were conducted with a total of 6 individuals whom are intertwined to the National Park System in both of the Sāmoas. In American Sāmoa the individuals consulted and their titles are as follows: Peter Craig; a chief marine biologist employed with the ASNP (American Sāmoa National Park) for a total of 17 years, Epi Suafoa; a former archeologist employed with the ASNP for a total of 17 years and Mauga; a VIP located on the island of Taʻū employed with the ASNP for a total of 15 years. In Sāmoa I consulted the following individuals; Annie Mauga; a Planning and Policy Officer with the Forestry Division, Steve Brown; the Assistant CEO at the Ministry of Natural Resources and the Environment Services and Loto; a ranger within the O Le Pupu Puʻe National Park.
Adolph Hitler, the leader of the National Socialist, or Nazi party, became the German chancellor on January 30, 1933, marking the end of the Weimar Republic and, with it, the democratic ideals introduced (some say forced) onto Germany after the First World War. The Nazi regime was focused on the economic and cultural revival of Germany, a Germany that under their rule became a twisted abomination marked by militaristic aggression and conquest, economic renewal and the imposition of Aryan superiority over all other races. It is the latter that the Nazis are best known for--this idea of superiority led the Nazis to try and exterminate what they considered undesirables: Jews, Jehovah’s Witnesses, Gypsies, Slavs, and homosexuals. While homosexuals were one of the smallest groups targeted for extermination, Nazi leaders, especially Heinrich Himmler, reserved a special hatred for homosexuals, and the Nazi party moved against them almost immediately after assuming power. While to the Nazis homosexuality was perceived as a threat to their male-dominated organization, it was also used as a tool: charges of homosexuality were often enough to send the perceived offender to jail or to a concentration camp. In the camps, homosexuals suffered abuse from not only the guards, but the other prisoners as well, and were segregated to keep them from forming into groups. In comparison, from the late nineteenth century Germany had been one of the leaders in the homosexual rights movement, and homosexuals were an established, although still controversial part of German culture. However, during the Nazi regime the homosexual fight for equality and any gains that were made vanished and replaced with an attitude that was both brutal and dehumanizing to those accused of homosexual behavior. After World War II ended homosexuals experienced continued legal and social discrimination on a far greater scale than other victims of Nazi brutality.

The newly formed German state exercised the Anti-homosexual sentiment that existed by drafting Paragraph 175 in the German penal code of 1871. Paragraph 175 (or P175) effectively criminalized sodomy, stating that “A male who indulges in criminally indecent activities with another male... will be punished with jail.” The text does not mention women; in fact lesbianism was never criminalized in Germany. The male dominated Germany society viewed lesbianism as a casual outgrowth of female bonding that manifested itself during adolescence and usually subsided as women joined or were forced into patriarchal households. During the Nazi controlled years lesbianism was not seen as a threat to the perpetuation of the German race as lesbians could be forced to have children.

The gay rights movement was born in response to P175. The leading figure of this movement was Magnus Hirschfield who in 1919 founded the Institute for Sexual Research which was revolutionary for its time by employing physicians to offer sexual counseling and offer tests for sexually transmitted diseases. Hirschfield, a Jew, doctor and homosexual, authored over 200 titles from books to pamphlets on homosexuality in men and women. Hirschfield also formed the World League for Sexual Reform in 1921 and became involved in the effort to legalize
homosexuality in Germany throughout the 1920’s. While Hirschfield’s influence cannot be overstated, some of his ideas by today’s standards seem backwards. One of these was his idea of homosexuals comprising a “third sex” between men and women.¹ Sex and gender were often thought as mutually exclusive at the time and the idea of a third sex was held to account for the existence of the gay subculture. However, this idea was insulting to homosexuals who firmly identified as men. Hirschfield had abandoned the idea in 1910 but it was not dead: the Nazi party resurrected it during their rise to power and used the “third sex” theory to classify homosexuals as a subhuman race, similar to the Jews.

The gay rights movement worked with other movements such as women’s rights, and gay culture was the subject of heated debates fueled by a new medium of expression: celluloid. Many homosexual and lesbian films were produced in Weimar Germany, the most famous being Anders als die Andern, or “Different from the Others.” In 1919 Anders als die Andern sparked heated debate within the medical community and drew criticism for pushing the third sex idea from large segments of the general public and from other homosexuals. In the movie the protagonist blackmails his lover into staying with him, offending many of those in the gay rights movement who were pushing to decriminalize homosexuality. Blackmail of homosexual conduct was also used in politics at the time, even among those who claimed to be allies of the movement, the Social Democrats and Communists. The legislation to overturn P. 175 was introduced several times to the Reichstag, the German national assembly, but was defeated by a coalition of right wing parties including the National Socialists. The 1924 trial of Fritz Haarmann, a homosexual who admitted to 124 murders of young men split the Communist and Social Democrat alliance. Haarmann was an informant for the chief of police in Hannover, a Social Democrat who often raided the Communist party headquarters in Hannover. The shocking details of the case were in the German papers for months and permanently damaged the gay rights movement while adding fodder for the arguments of their enemies, notably the Nazi party.

Homosexual culture was often attacked by its opponents as being criminal, which it was to a degree under P. 175. Homosexuals were also attacked for being effeminate; during this period there was a major focus on masculine men’s movements from the Free Youth Movement to the Nazi SA. Men’s organizations were seen as an expression of nationalism and many German philosophers glorified the bonds formed between men but at the same time decried homosexuality as unnatural; the Nazis were no exception. In 1929 during a vote on striking down P. 175 in the Reichstag, Hitler’s official newspaper, the Völkischer Beobachter wrote: “But don’t think that we Germans will allow these laws to stand for a single day after we have come to power…. Their (Jewish) [sic.] efforts are nothing but vulgar, perverted crimes and we will punish them by banishment or hanging.”²⁶

The punishment of these laws would be laid out by two of the Nazi regimes most infamous criminals, Adolph Hitler and Heinrich Himmler. While Hitler’s hatred for non-Aryans is well known, his hatred for homosexuals was not an obsession unlike Himmler’s. Hitler often spoke of his solutions to the problems but rarely gave specific orders or directions: it was up to Himmler to figure out the Fuhrer’s wishes and fulfill them. Before 1934 the only recorded remark Hitler said about homosexuality was that it had destroyed the empire of Ancient Greece.³ Hitler’s anti-homosexual feelings seem to spring from his hatred of Jews. An early idol of his was Otto Weininger, a homosexual Jewish author of Sex and Character⁴ who stated that the essence of Jewishness was femininity. Possibly, Hitler used this logic to equate effeminate homosexuality with Jewishness. Himmler is said to have been afraid and hateful of homosexuals from his childhood, stemming from his need for inclusion in homosocial fraternities. The young Himmler’s
diary mentions two influential books which are at the core of this hatred, *The Priest and the Acolyte* by John Francis Bloxam and *Die Rolle der Erotik in der männlichen Gesellschaft* (*The Role of Eroticism in Male Society*) by Hans Blüher. To Himmler the ideas presented in *The Priest and the Acolyte* on homoerotic bonds between men and boys, and the focus of homoeroticism as the crucial element in men’s organizations in *Die Rolle der Erotik in der männlichen Gesellschaft* combined in his mind to produce an idea of homosexuality as pederasty, with young boys as the main victims. To the Nazis and Himmler the estimated two million homosexuals in Germany were a threat to the Nazi ideal of propelling the Aryan race to such a overwhelming degree that it could take over the world. Himmler viewed homosexuals as “propagation blanks” that preyed on boys and subverted Himmler’s goal of a worldwide German master race.

The Nazi regime can be seen as a “Biocracy,” subverting and twisting medical science to serve state policy. In order to impose global will, the Third Reich needed to increase its population to match and exceed that of its opponents. The Nazi idea of their racial superiority to their opponents meant that this population growth could only take one form: childbirth. Homosexuals seemed to work against this goal; not only would they not have children, but the Nazis believed that they would seduce weak men, men that would otherwise be attracted to women. Homosexuality was also viewed as a danger to the all male organizations in the Nazi government (Hitler Youth, SA, SS and the fighting units of the military). All allegiance was supposed to be given to the Fuhrer and Germany; if homosexuality was allowed anywhere the prevailing thought was that homosexual seduction would draw male allegiance away from the state and to each other. However, much like the Social Democrats and Communists of the Weimar years, the Nazi party used charges of homosexuality as a political tool. Charges of homosexual behavior were often used to get rid of opponents, and civilians used them to carry out personal vendettas often unrelated to the charges themselves. Nazi leaders seemed to have little concern for lesbians, due to the fact that they held few positions of prominence in the Nazi state and could be forced into having children.

The Nazis moved against homosexuals immediately after they entered power in January 30th, 1933 and proved the seriousness of their violent rhetoric. On February 23rd of that year, less than a month later, homosexual rights organizations and pornography were banned in Germany. The Nazis’ next act was a huge blow to the Gay rights movement. On May 6, 1933 the Nazis ordered the closing of the Institute for Sexual Research as well as the destruction of all the materials contained within. Hirschfield was in Holland during the time and so he avoided capture; he never returned to Germany, and died in Holland in 1935.

During the night of June 30th, 1934 (also known as “The Night of the Long Knives”), under the orders of Hitler the SS (at this point a subgroup of the SA) attacked and killed prominent SA leaders and other enemies of the state, including the SA leader, Ernest Röhm. The purge was publicly justified by Hitler who leveled charges of treason and homosexuality at the leadership of the SA, including Röhm. Hitler also wanted to assure the public that he was a moral steward and would not let German boys “become morally corrupted in their [the SA] ranks.” The Nazi idea of homosexuality could not be realistically applied to most homosexuals, especially Röhm. Röhm was a former military man, served in World War I and loved a fight; he gave Hitler his first job and was one of Hitler’s most ardent supporters and closest associate until his death in a Berlin jail cell on July, 1 1934. Röhm hated cowardice – physical as well as mental, he was unapologetic of his sexual orientation and believed that it was a private matter: “it appears to me to defy all laws of common sense if the state takes it upon itself to regulate the private lives of human
beings or tries to redirect these lives toward other goals.” Röhm’s attitude and flagrance of his homosexuality along with his power as leader of the SA made him an enemy of the Third Reich, although he was defended by Hitler from his detractors until it served his interest not to. No one hated Röhm more than Heinrich Himmler, Röhm did not fit into Himmler’s idea of homosexuality and Himmler must have found it unbearable to be under a homosexual. It is worth noting with some irony that one of Röhm’s biggest detractors, General Werner von Fritsch, four years later became victim to accusations of homosexuality that forced him to resign.

It seems that Hitler needed some way to assuage his conscience for killing one of his most loyal supporters, and Röhm’s homosexuality offered just what he needed. From this point on the Nazi regime became even more oppressive and deadly to homosexuals. On January 28, 1935 the Nazis strengthened P175, including any activity between two men judged to be “indecent”, and if found guilty the court could deprive a subject of his civil rights. The new law, P175a was also made retroactive going back ten years, precipitating a jump in arrests by the Gestapo and marking the turning point to which many scholars call the “war against contragenics.” Himmler was dismayed at the idea of two million homosexuals in German territory and focused much of his and the Gestapo’s activity on the eradication of homosexuality. The first step was to morph the vague language of P175a into something that could be used to arrest whoever was deemed a “community alien,” someone who “shows himself unable to satisfy the minimal demands of the racial community by his own efforts.” This addition to P175 gave the Gestapo and Kripo (criminal police) carte blanch to arrest anyone accused of homosexual conduct, and once in jail homosexuals could be tortured and held without charge. At the beginning of 1938 Himmler issued a memo stating that men accused of a P175a violation could be sent directly to a concentration camp, thereby completely stripping the alleged offender of their civil rights. Later in 1941 it was decided by Himmler that a Volksschädling or damager of the racial (German) people, i.e. homosexuals, could be put to death. Without documents detailing the arrest of P175a offenders after 1938, it is impossible to know just how many people were put to death in this fashion. In 1943, apparently convinced that Germany was free of homosexuals, Himmler gave the Gestapo the power to intervene in military courts in cases concerning homosexuality, angering many in the military who resented this state intrusion. Many military sentences for homosexual conduct were much less severe than the Gestapo’s, a possible reason that Himmler wanted to interfere.

Close to 100,000 men arrested for P175a convictions, around 5,000 to 15,000 were sent to concentration camps, mainly Mauthausen in southern Germany. Homosexual prisoners comprised one of the smallest groups sent to concentration camps; however they suffered the highest rate of death of all groups of prisoners at over sixty percent. Camp inmates had to wear a triangle on their coat and pants to distinguish their offense: homosexuals wore a pink triangle. Originally all triangles were the same size; however, to make identification easier after March, 1941, the pink triangle doubled in size while others stayed the same. Life in the camps was especially cruel for homosexuals; they were mistreated by both the guards and prisoners. Many guards took special pleasure in torturing homosexual prisoners. One account tells of a man who had his testicles held in boiling water until the skin peeled off, after this he was sodomized with a broken broomstick, while the assembled SS guards drank and engaged in mutual masturbation. Homosexual prisoners were also punished by other prisoners for homosexual actions by camp guards against other inmates in a twisted association between the two. Homosexuals were not assigned to blocks; they were spread
out among the camp in order to prevent their organization. This lack of protection and social structure made them more vulnerable than other prisoners, contributing to their high death rate. Homosexuality was still prevalent among other prisoners; many young homosexuals were taken under the wings of “Capos”\(^\text{21}\), prisoners selected by the SS to be in charge of cell blocks. Capo protection often mean extra rations and a lighter work detail and these could be the difference between life and death for homosexuals. Another survival method for homosexuals in the camps was to declare revulsion for homosexuality and accept castration. German prisoners who took this option were often put in a *Dirlewager*,\(^\text{22}\) or penal division and sent to the Russian front. While these units were deemed expendable and suffered high casualties, it was often preferred to life in the concentration camps.

Of the estimated two million homosexuals in Germany, only around 100,000 are recorded as arrested, which leaves a large segment of the homosexual population unaccounted for. Certain homosexuals were protected by the Third Reich; Gustaf Gründgens was a famous actor, director and star of the Berlin State Theater that was a favorite with Hermann Goering.\(^\text{23}\) While few homosexuals were as well connected as Gründgens, others had minor connections or were extremely discreet and able to suppress their homosexuality from others. This is one advantage that social criminals had over racial criminals--German homosexuals were born German, not Jewish or Gypsies. Armed service was also another way for homosexuals to avoid the camps until 1943 when the Gestapo turned its attention on the military.

The criminalization and imprisonment of homosexuals did not end with the fall of the Third Reich. P175a was kept as law in both post-war Germanys, in the communist East until 1967 and 1969 in the democratic West. Interestingly, this law appears to be one of the few, if any, Nazi laws that stayed on the books in both East and West Germany after World War II. German courts ruled that time spent in concentration camps was not considered jail time, and homosexual prisoners who had sentences left at the end of the war were sent to jail until the sentence imposed on them by the Nazi courts was complete. Many homosexuals were afraid to speak out even after homosexuality was decriminalized. A lifetime of discrimination had taken its toll – of 1,000 known homosexual concentration camp prisoners alive in 1980 only 15 have spoken of their experience and all of them anonymously.\(^\text{24}\) Homosexuals were also not able to receive reparations payments until 1982, long after many had died from injuries they received in concentration camps. Of the few books on the subject most are in German and have been printed on gay-run presses with low print runs, complicating the ability of interested non-Germans to gather information.

The persecution of homosexuals in Nazi Germany is a unique and violent episode of Nazi history. Homosexuals in Berlin at the beginning of the twentieth century were leading the fight for mainstream societal acceptance and making gains – gains that would soon be undone by the Nazi Party upon acquisition of power in January 30th, 1933. Under the Nazis homosexuals would become a major target of persecution: they were stripped of their civil rights, forced into concentration camps where they were abused by guards and prisoners, and suffered the highest death rate of any group in the camps. It is impossible to know how many homosexuals were arrested and/or killed, after 1939 the Gestapo often did not keep records due to the ever-increasing workload and pressure from the architect of Nazi hatred, Heinrich Himmler. After the war ended homosexuality continued to be illegal, adding to the injuries suffered by homosexuals under the Nazis. Failing to hide a basic characteristic of humanity, their sexuality, became deadly for homosexuals in Nazi Germany.
Footnotes

1 Paragraph 175 (P175) throughout the paper, it can be found in its entirety in Appendix I.


3 Plant, The Pink Triangle, 43.


6 Alfred Rosenberg, Völkischer Beobachter, August 2, 1930, 13.


10 Plant, The Pink Triangle, 185.


12 Not only homosexuality was used in this way; accusations of consorting with Jews, being work-shy and others were used.


14 Plant, The Pink Triangle, 58.

15 Plant, The Pink Triangle, 60.

16 See Appendix II.

17 Plant, The Pink Triangle, 74.

18 Gellately and Stoltzfus, Social Outsiders in Nazi Germany, 39.


20 Heger, The Men With The Pink Triangle, 83.


22 Heger, The Men With The Pink Triangle, 98.

23 Gellately and Stoltzfus, Social Outsiders in Nazi Germany, 108.

Bibliography


Appendix I
Text of Paragraph 175 (P175):

175:  
1. A male who indulges in criminally indecent activities with another male or who allows himself to participate in such activities will be punished with jail.

2. If one of the participants is under the age of twenty-one, and if the crime has not been grave, the court may dispense with the jail sentence.

Appendix II
Text of Paragraph 175a and 175b added by the Nazis on Jan. 28, 1935:

175a: A jail sentence of up to ten years or, if mitigating circumstance can be established, a jail sentence of no less than three year will be imposed on:

1. Any male who by force or by threat of violence and danger to life and limb compels another man to indulge in criminally indecent activities, or allows himself to participate in such activities;

2. Any male who forces another male to indulge with him in crimially indecent activities by using the subordinate position of the other man, whether it be at work or elsewhere, or who allows himself to participate in such activities;

3. Any male who indulges professionally and for profit an criminally indecent activities with other males, or allows himself to be used for such activities or who offers himself for same.

175b: Criminally indecent activities by males with animals are to be punished by jail; in addition, the court may deprive the subject of his civil rights.

Papa ‘Ōlelo Hawai‘i 304

Ka‘ao no Kawaiola

Carol "Kawaiola" Gonsalves


UA noho maika‘i ‘o ia me kona ‘ohana a me nā hoaaloha. I loko nō o ka nui o nā lā mālie ma Kohala, ‘o ka ‘oia‘i‘o, “Kahilipulu Kohala na ka makani” (Mary Kawena Puku‘i). ‘O ia ke kumu e hiki ai iā kākou ke ‘ike i kona lauo ho huhuluwī i nā ki‘i o kona wā kamali‘i. I kēlā manawa, ‘o “Maika‘i Ka Makani O Kohala” kāna mele punahele. ‘A‘ole pili ia mele i ka makani ‘Āpa‘apa‘a no ka mea ua loa‘a he mau ‘ano makani ‘ē a‘e ma Kohala. ‘O kēia ia mele kaulana āna i a‘o mai ai ma kona wā kamali‘i ma lalo nei:

Maika‘i Ka Makani O Kohala
Maika‘i ka makani o Kohala
‘ike ‘ia e ka inuuvai
‘O ka wai nō ia pono kāua
Wai kaulana o ka ‘aina.
Ko aloha, ko aloha ka‘u mea nui
He makana, he makana na ka pu‘uwait.

He hapa Kelemānia a he hapa Kōlea ko Waiola makuahine, ‘o Violet Chang kona inoa ma mua o kona male ‘ana me Obed Naukana Kaiawe, ‘ōpio. He Hawai‘i ‘o Obed me ke koko Pelekānā kekahi.


I loko o ko Kawaiola kino.

Ua noho ko Kawaiola makuakāne ma ka 'aina 'o Ka'ohe, Kona, ma kona wā kamali'i a hiki i ka wā ona i lilo aia i māka'i, 'o ia ka manawa ho'okahi āna i male ai me Viole, a me kona ne'e 'ana i Kohala. No ka ho'ihoi nui o Kawaiola a me kona kaikua'ana a me kona mau kaikaina 'elua, ua nui nā mo'olelo Hawai'i a Obed i ha'i ai i kāna mau kaikamāhine e pili ana i kekahī mau mea kupaianaha e pili ana iā Ka'ohe, Kona. Ha'i 'o ia no ka lele 'ana a'e o nā pōhaku 'a'a no lākou iho ma kēlā 'ao'ao a hiki i kēia 'ao'ao ma luna o kona po'o i kona holo 'ana ma luna o ka 'ēkake i mea e hana ai ma ka māla i ke kuahiwi. 'O ka mea ho'opū'iwa, 'a'ole 'o ia i 'ike iki i kekahī po'e i kiola i ia mau pōhaku. Ua lele pinepine a'ela nā pōhaku no lākou iho nō! Eia kekahī, ma ke alahele, kahi i ho'omakau'u 'ia ai ka 'ēkake, ua komo aku ka maka'u i loko o Obed kekahī no ka mea kohu mea lā he akua lapu e hā Ana ma hope o kona 'a'i. I nā pa ma ia 'aina i lele ai nā akua lele ma'o a ma 'ane'i, 'o ia nā pōpō ahi e lele ana mai 'ō a 'ō, a e hakakā pū me ka 'ōlapa 'ana o ke ahi.

Ua pū'iwa nā kaikamāhine, 'oiai ua ha'i 'o Obed e pili ana i kekahī pō i noho ai ka 'ohana i ka lumi ho'okipa me ke kukui 'ailahonu i waenakono o ia lumi. Ua ho'omakau ia kukui e hiō nona iho mai kēlā 'ao'ao a i kēia 'ao'ao me ka ikaika no'i. Ua pū'iwa nō ka 'ohana, a ua nui ko lākou hūhū kekahī. 'O ka lālau akula nō ia o ia kukui a kiloi ihola i ua mea ho'omakau'u nei i waho o ka hale!

He mau makahiki aku nei ua huaka'i ka 'ohana o Kawaiola i ia wahi, 'o ia ho'i kahi i noho 'ia e nā māku o kona makuakāne. He 'umi ona makahiki i ia wā. Ua loa'a he pā pōhaku a puni ka pā hale a ma kahi kokoke, he kumu manakō he iwakālua kapua'i ke ki'e'ie. Ua noho ihola ka 'ohana ma lalo o ia kumu manakō me ka wa'aau pū. I ko Kawaiola mana'o, 'ano manakā ia hana, no laila, ua ho'omakau 'o ia e pi'i i luna o ia kumulā'au. I ka manawa āna i hō'ea ai i waena o nā lālā ma luna a'e ua ho'omakau nā lālā e 'oni 'ino me he mea lā ua huki 'ia e kekahī! 'Ano 'ē ia hana no ka mea 'a'ōhe makani iki i ia lā. Ua nānā a'ela ka 'ohana a ua lele ihola 'o Kawaiola.

I ia mau mo'olelo pōkole, 'a'ole no ko Kawaiola 'ohana ka hewa. Ua hana 'ia kekahī mea ma luna o lākou. Kū'e pāha lākou i kēia 'ano hana kupanaha, akā, 'a'ole hiki iā lākou ke kāohi i ia 'ano hana. Eia na'e, 'o ka pololei, ua pono kākou e akehele i kā kākou e hana ai. He la'ana kēia. I ko Kawaiola hele 'ana i ka papa 'ōlelo Hawai'i a Kainanī, 'o ia ka papa Makahiki 'Elua ma ke Kulanui o Hawai'i ma Hilo, ma mua o kona ha'i 'ana i kona mo'okū'auhau, ua kāhea mai o 'ia me ka leo ikaika i kona mau kūpuna i mea e komo mai ai lākou. Kohu mea lā, ua komo mai kekahī o nā kūpuna a ua kōkua mai lākou i ka mea a Kawaiola i ha'i ai. Ma ka pau 'ana o ka ha'i 'ōlelo, 'a'ole i mahalo 'ia nā kūpuna e Kawaiola, a 'a'ole 'o ia i ha'i iā lākou, "Hiki iā oukou ke ho'i i ko oukou wahi." I ka 'auinalā o ia lā ho'okahi, iā Kawaiola i minoaka ai ma mua o ke aniani kū, ua komo ka no'ono'o ikaika loa i loko ona i kona 'ike 'ana i ke kahō o kona koko mai lok auk o kona lehelehe, akā 'a'ole i moku ka lehelehe. No laila, ma mua o kekahī hana a kākou, ua pono kākou e no'ono'o i ka hopena.
Kekahi kumu i ho‘ohana ‘ia i loko o ka pepa:

Mary Kawena Puku‘i, ‘Ōlelo No‘eau/Hawaiian
Proverbs & Poetical Sayings, Bernice P. Bishop
Museum Special Publication No. 71, Bishop
Museum Press, Honolulu, Hawai‘i, 1983.
(#1313)

*‘O nā ki‘i i loko o kēia pepa nei, no ko
Kawaiola ‘ohana mai ia mau ki‘i.
A Synopsis of the Olympia Oyster (Ostrea lurida)
Ashley Bulseco

Introduction
The Olympia Oyster, Ostrea lurida (Carpenter 1864), is the only native oyster species that inhabits the west coast of Canada and the United States (McGraw 2009). Although preferably called the Olympia Oyster, other common names include California Oyster, Native Oyster, Shoalwater Oyster, Yaquina Bay Oyster, and Rock Oyster (Couch et al. 1989). Olympia Oysters have always been historically important, and are commonly collected for use as cocktail oysters. However, anthropogenic effects, including overharvesting and pollution, have caused the species to experience a severe decline. For many reasons, the restoration and expansion of Ostrea lurida in their natural habitat is crucial, and remain one of the main projects of fishery management in the Pacific Northwest.

Ostrea lurida, and a very similar oyster Ostrea conchaphila (Carpenter 1857) were originally considered to be two separate species (Polson et al. 2009). However, in 1985, Harry proposed synonymy between Ostrea lurida and Ostrea conchaphila with the assumption of high phenotypic plasticity. After his proposal based strictly on shell and anatomical characteristics, many scientists questioned the validity of his claim. In a reaction study, Polson et al. (2009) used molecular markers to examine the potential synonymy between the two species, and compared both DNA sequences and post-hoc morphological characteristics. With further research, they found that Carpenter’s original classifications (1964) of Ostrea lurida and Ostrea conchaphila as two distinct species were correct (Polson et al., 2009). Ostrea lurida was reinstated as the Olympia Oyster, inhabiting the west coast northward from Baja, California to Sitka, Alaska, and Ostrea conchaphila was stated to inhabit areas from Sinaloa, Mexico southward to Panama (McGraw 2009). In this paper, the scientific name Ostrea lurida will be used interchangeably with its common name, Olympia Oyster. This final determination of species delineation is important for restoration purposes: in order to effectively protect a species, one must understand their characteristics as a species.

Natural History
Males and females cannot be distinguished visually. The process of dissection must be used to determine the sex of the individual. The life cycle of Ostrea lurida is comparable to that of other oysters in the same genus, Ostrea, or the flat oysters (Couch et al. 1989). It is hermaphroditic, meaning the reproductive organs of both male and female sexes are present, and viviparous, meaning fertilization and development occur within the female body (Hopkins, 1935). Coe (1934) described the species as protandric, a form of hermaphrodites in which male organs precede that of the female organs. This anatomical development is most likely due to the fact that spermatogonia proliferate more rapidly than the ovogonia (Coe 1931a). More specifically, the oyster originally spawns as a male, and then alternates between male and female genders per each spawning cycle.
(Couch et al. 1989).

After being retained in the female for a period of time, the larvae are released late in development. Metamorphosis occurs, and the larvae transform into juveniles, or spat. The timing of reproduction is heavily dependent on temperature, which is believed to cue spawning and dictate the length of season (Seale and Zacherl 2009). In the southern portion of Ostrea lurida’s geographic range, male oysters typically begin to spawn once the water temperature reaches 16°C. Any temperature below this critical point inhibits spawning indefinitely (Coe 1931a, 1931b). Males release ellipsoid clusters or balls of sperm, usually consisting of approximately 250-2000 spermatozoa (Coe 1931b), into the mantle cavity. By means of shell contractions, the sperm balls are released into the seawater, and are then dissolved, enabling the uptake of spermatozoa into the mantle cavity of females, fertilizing the eggs inside her (Coe 1932). The detection of these spermatozoa in the water will proceed to cue synchronous spawning in Olympia Oysters of the same population (Couch et al. 1989). Once the eggs are fertilized, they develop into veliger larvae, a form of planktonic larvae characteristic of many marine mollusks. Approximately 10-12 days later (Hopkins 1936), the veliger larvae, which have already developed into fully shelled individuals (Walne 1974), are discharged, and remain planktonic for 11-16 days (Imai et al., 1954). The larvae eventually attach to a substrate, usually old shells, rocks, wood, or metal. It is most often found that Ostrea lurida settle on the lower or under side of horizontal surfaces. Based on studies by Hopkins (1935), settlement is not due to tropistic reaction to light, but instead to the upper position of the foot on the larvae as it is suspended in the water column.

Clearly, environmental conditions are crucial in the reproduction and development of Ostrea lurida. They are extremely sensitive to both high and low temperatures, usually stable within the ranges of 6°-9°C in winter and 18°-20°C in summer (Hopkins 1935). Most males do not spawn unless water temperatures reach the critical point of 16°C. Furthermore, a low temperature (i.e. a drop below the critical point), halts the cycle of sex alternation until favorable conditions return (Coe 1931a). Alternation will proceed throughout the oyster’s life cycle, which can span for 10 plus years if left undisturbed (Aquatic Species at Risk 2006). Ostrea lurida thrive at salinities higher than 25ppt, ranging from estuarine to saline water in the subtidal zone, but can survive short exposures to lower salinity (Korringa 1976). A practical application of environmental manipulation is the eradication of parasitic flatworms, in which growers expose the oysters to a freshwater tide. The Olympia Oysters can survive the short flush of lower salinity, while the flatworms cannot (Couch et al. 1989).

Ostrea lurida are filter feeders, meaning they feed by straining small particles of food from the water. Essentially, they obtain their nutrition from phytoplankton, small photosynthetic organisms that drift within the water column, and particulate organic matter or POM (Lucas and Southgate 2003). Ostrea lurida possess ciliated gills, which create a current to intake water. Food particles are trapped by the cilia lining, and are pushed towards the mouth by way of labial palps. Particles too large for the mouth are bound in mucus, and released as pseudofeces, while undigested food is released as feces. Material that is able to be digested is absorbed as nutrients by the organism (Spencer 2002). To describe the rate of ingestion by the oyster, the following formula may be used:

\[ IR = \left( FR \times PR \right) \times FC - Ps \]

where IR represents the ingestion rate of food uptake, FR represents the water’s rate of flow through the organism’s gills, PR represents the proportion of the food in the water that is withheld in the gills, FC represents food concentration in the water, and Ps represents the rate at which pseudofeces is produced (Lucas and Southgate 2003).
Geographic Range of Ostrea lurida

The historic range of Ostrea lurida, which was once very abundant in the estuaries of the North American west coast, includes Baja, California to Sitka Alaska. According to fossil data from Washington, California, and Oregon, the Olympia Oyster was common (Polson and Zacherl 2009). It existed as early as the late Miocene and early Pliocene in central California, and the late Pleistocene in Northern California (Baker, Richmond, and Terwillinger 1999). Its natural habitat includes rocks in areas near the expanse of the low tide, and mudflats and gravel bars in estuaries and bays (Nosho 1989). However, after a combination of anthropogenic influence from Native Americans, overharvesting, pollution, invasive species, loss of substrate, and urbanization, Olympia Oysters have experienced a severe decline (McGraw 2009). According to Gillespie (2009), populations are not common on the coast of British Columbia, and are typically limited to protected waters. Abundance numbers of the Olympia Oyster are considered stable, but at low levels relative to historic data. Based on other studies, populations in Washington and Oregon are beginning to experience restoration and expansion where numbers were otherwise devastated (McGraw 2009). In addition, Polson & Zacherl (2009) determined that populations in California were also slowly rising based on presence/absence data. Therefore, restoration projects and monitoring efforts are being initiated to restore the current range of Ostrea lurida back to its formerly expansive natural range.

Figure 1: Olympia Oyster (Ostrea lurida). Taxonomically accurate representation (NOAA)

As a side note, one factor to consider is the impact these restoration projects may have on the genetic composition of the oysters. A study by Camara & Vadopalas (2009) discusses the practical options for oyster restoration, and the urgency of planning a well-managed and strategic form of restoration. Restoration should be viewed in the genetic context as well, because the restored population must be “genetically healthy” in order to ensure its future persistence throughout these various genetic regions. This factor is commonly overlooked.

Taxonomy

Figure 2: Diagram showing general anatomy of Olympia Oyster (Ostrea lurida) (NOAA)

The Olympia Oyster belongs to phylum Mollusca, the second largest phylum consisting of approximately 110,000 different species. The basic body plan of all members of this Phylum include a visceral mass, a mantle (the tissue responsible for making the shell), a foot (the muscular portion used for movement), a radula (a scraping tongue), Nephridia and Nephrostomes (used to excrete waste), and gills (associated with the circulatory tract and with feeding) (Karleskint, Turner, and Small 2010). Oysters, along with clams, scallops, and mussels, belong to Class Bivalvia, whose further characteristics include two shells, which are clamped by a ligament and 1-2 adductor muscles. The animal’s foot is used to anchor to surfaces, and the oyster is essentially glued to the hard substance it
chooses to settle on. Figure 1 is a drawing of a typical Olympia Oyster, and Figure 2 goes into more detail in regards to basic anatomy.

Olympia Oysters are flat oysters, belonging to the Order Ostreoida and Family Ostreidae (Korringa 1976). Their shell averages 5-8 cm long, and rarely exceeds 9 cm. Typical shape varies, because the oyster will actually conform to the shape of the particular substrate they have settled on (Couch et al 1989), but in general it is elliptical or ovoid. Color range includes a blackish gray shade on the outside, and a shiny gray to pale blue on the inside (Nosho 1989). The outside may be striped a yellow or purplish-brown, and the adductor muscle scar consists of a color very similar to the rest of the oyster (Couch et al. 1989).

Ostrea lurida is a typical flat oyster closely related to the European Flat Oyster, Ostrea edulis (Korringa 1976). Fujio, Yamanaka, and Smith (1983) used gel electrophoresis to survey genetic variation of 25 species of marine mollusks, and determined that the two oysters (Ostrea lurida and Ostrea edulis) had low levels of genetic variation. Both species are characteristic of temperate zones, and differ in the like that Ostrea lurida has a slightly longer pelagic/planktonic phase, and does not require very clean clutch for settling (Korringa 1976). It has also been stated that Ostrea lurida and Ostrea chilensis, the Chilean Oyster, are similar. As with the majority of Ostrea oysters, both have similar brooding behavior in that the female holds her young in the mantle cavity for almost the entirety of their developmental period (Chaparro, Navarrete, and Thompson 2006). Due to the comparative similarities between Ostrea lurida and its closest relatives, Ostrea edulis and Ostrea chilensis, and the fact that extensive culture has not been accomplished with Olympia Oysters at this point in time, technique in broodstock management, spawning, incubation, larval rearing, and processing in the following sections may refer to one or all of these three species.

Ecosystem Services

Oyster reefs, or a dense collection of individuals forming an oyster bed, are crucial to the environment. Serving much like coral reefs, they provide substrate for a variety of organisms (including juvenile fish, worms, crustaceans, and foraging birds), and promote biodiversity by acting as physical habitat structure. Oyster beds also stabilize sediment, resulting in an increased opportunity for aquatic vegetation settlement. Finally, oysters are filter feeders. One indirect consequence of their feeding is the subsequent filtration of surrounding water. A large and robust population of oysters can effectively regulate plankton blooms, therefore decreasing the potential for Red Tide and other harmful algal blooms (Peabody and Griffin 2008). The oysters’ presence can also reduce the turbidity of the sea water, and help to balance nutrient input (Peter-Contesse and Peabody 2005). Olympia Oysters are not only a source of food, but also play an important ecological role in our oceans. Their significance is another factor to take into consideration when focusing on restoration efforts of Ostrea lurida.

Culturing Ostrea lurida

Although Olympia Oysters can be cultured for direct human consumption, mainly as cocktail oysters (Korringa 1976), the strong majority are produced to facilitate restoration efforts (McGraw 2009). Both scientists and restoration practitioners have dedicated time and effort to restore Ostrea lurida in areas along the west coast where it previously existed. Over $1 million has been invested so far by NOAA, and at its current rate, this investment will undoubtedly increase (McGraw 2009). Restoration is not only important due to their ecological significance, but also because their severe decline was human-based.

Because the ultimate goal for the Olympia Oyster is typically restoration, technique for its culture may differ slightly from that of other oysters. For example, one of the two strategies used in restoration efforts is
“seeding”, or adding new live cultured oysters to a bay or estuary (Peabody and Griffin 2008). Successful cultured reestablishment of Ostrea lurida requires extensive knowledge and careful consideration for various conditions (Peter-Contesse and Peabody 2005). In the following sections, broodstock management, spawning, incubation, larval rearing, and grow-out will assume that the cultured oyster is for restoration purposes. The last two sections on processing and marketing will then discuss the occasion of culture for human consumption.

**Broodstock Management**

Broodstock is a natural population of sexually mature individuals, which provides gametes for reproduction. Generally, they are kept separate from the rest of the cultured species to prevent the spread of disease. To obtain Ostrea lurida broodstock, adult oysters are harvested from the wild, and transported to the hatchery for spawning (Peabody and Griffin 2008). In selecting appropriate broodstock, one must consider that Ostrea lurida is protandric, meaning that the oyster matures initially as a male. Therefore, it is important that oysters well past sexual maturity are selected, to ensure that both sexes are present in the broodstock (Spencer 2002). Olympia Oysters are very rarely over 9cm in length, so target broodstock should range from 4-8cm (Korringa 1976).

Ostrea lurida are not highly susceptible to overcrowding, so stocking densities can be fairly high. Because they are strictly filter feeders, no feed is used in culturing Olympia Oysters. Instead, a sufficient volume of fine phytoplankton or POM particles (2+μm) must be present in the surrounding water, so that the oysters have access to food (Lucas and Southgate 2003). The higher the density, the more food required. However, the algae concentration cannot reach exceedingly high levels, for a depleted level of oxygen will result. Therefore, the ingestion rate can be calculated via the formula $IR = [(FR \times PR) \times FC] − Ps$, and can serve as the basis of the optimum cell concentration of algae. Generally, the optimum cell concentration will increase as the life cycle advances (Lucas and Southgate 2003).

Health management is very important in culturing oysters, and begins as early as the selection of broodstock. One management concern, especially applicable in the restoration of Ostrea lurida, is protecting the genetic identity of the remaining Oyster populations. According to the WDFW (Washington Department of Fish and Wildlife), brood oysters should originate from the same area in which the offspring will be seeded, ensuring that the oysters will be restored according to their natural habitat (Peter-Contesse and Peabody 2005). Related to the research of Camara & Vadopalas, great care should be taken in restoring these oysters. There is potential to cause more harm than good if genetic variation between different populations along the west coast of North America is not taken into consideration (2009). Therefore, collection of broodstock should be completed by non-profit organizations or commercial shellfish farming operations, both in compliance of permit regulations (Peter-Contesse and Peabody 2005).

Another major concern in broodstock health management is the movement or introduction of shellfish diseases. Due to the feeding nature of oysters, they are very susceptible to obtaining diseases from the water (i.e. biotoxins, Red Tide, various bacteria, viruses, and heavy metals). These conditions are not necessarily harmful to the organism, but are rather deleterious to human health if consumed. Therefore, before the production of seed cultivation, brood oysters are tested by shellfish pathologists. Testing guarantees that the collected broodstock is free of shellfish-bourne disease, and will not carry or transfer any pathogens to the remainder of the oysters within the hatchery (Peter-Contesse and Peabody 2005). Health management is crucial in the successful culture of any organism, and will therefore be discussed in the remainder of the sections as well.
Spawning

Spawning of Ostrea lurida is highly dependent on temperature, and usually will not occur unless temperatures reach 16°C or higher (Coe 1931a, 1931b). If occurring in captivity (which is much less common than spat collection), spawning may have to be induced by temperature manipulation or presence of gonads in the water (as mentioned before, the detection of spermatozoa in nature induces all males to spawn) (Lucas and Southgate 2003). Densities can be fairly high, as Ostrea lurida are not susceptible to overcrowding. As long as enough phytoplankton is present to sustain the population, and the rest of the conditions are ideal, spawning will proceed via induction.

Given that broodstock can be separated accurately via sex, the males and females are commonly placed in separate containers for spawning. Since Ostrea lurida are larviparous, fertilization of the egg and early development of the larvae both take place within the gill cavity of the female (Spencer 2002). Therefore, females do not typically “spawn”, and larvae are not released until they have developed for approximately 10-12 days (Hopkins 1935).

Another common method, in place of spawning the oysters in captivity, is the technique of spat collection. This process skips the spawning step, and collects larvae directly from the wild on cultch. This technique will be discussed more in the “Larval Rearing” section, but essentially, it is the collection of newly metamorphosed oysters on a hard substrate provided by the oyster farmer. This substrate, typically old oyster shell, rock, or other hard substances, is later transported to the farm, thus providing oysters to be grown in the hatchery.

Incubation

Incubation is when fertilization occurs, and the time period thereafter. Density must be carefully monitored. If there is not enough sperm, fertilization will not occur efficiently, and will therefore result in a lower success rate. On the other hand, if too much sperm is present, there is potential for polyspermy, a condition in which eggs are fertilized by more than one sperm, which results in abnormality (Lucas and Southgate 2003). General abnormalities include those that make the individual infertile, and those that severely decrease their survival rate.

In general, larvae remain within the female for 10-12 days following fertilization (Hopkins 1935). During this time, water movement should be maintained via gentle aeration, and algae should be readily available for once the larvae are ejected from the female.

Larval Rearing

After 10-12 days of development within the female body, veliger larvae are released into the water column (Hopkins 1935). At this point in time, the larvae are approximately 170μm in length, and can remain in this stage for an additional 11-16 days (Imai et al. 1954). Once freely swimming in the broodstock tank, the larvae tend to swim upwards towards the surface of the water. The larvae may then be collected from the broodstock tank by scooping the upper layers of the water with a 90 μm mesh sieve (Spencer 2002), and should be kept separately in preparation for metamorphosis.

Another technique to obtain larvae is via spat collection. Hard substrates, such as old oyster shell, rock, or various kinds of panels, are provided for larvae to settle on. Once the veliger larvae find a suitable surface (usually the underside of a hard substrate), they metamorphose into juveniles, at which point they become sessile (Hopkins 1935).

Unlike the other stages of the oyster life cycle, density during larval rearing must remain relatively low (approximately 1-5 larvae per mL of water). Although densities begin high, they decrease over time due to mortality (Lucas and Southgate 2003). A consistent abundance of algae should be provided for the larvae, due to high energy demands at this point in the life cycle. Accurate levels of algae should be calculated, depending on the density of the culture.
In order to maintain healthy water and healthy larvae, multiple measures should be taken. Firstly, seawater should be filtered with an approximate 1 μm sieve. This step prevents the instance of sediment, organic debris, and zooplankton that may potentially serve as predators or competitors (Lucas and Southgate 2003). Water quality should always be monitored, and kept at a constant temperature and salinity (usually ranging from 16-19°C and 25-30 ppt respectively (Korringa 1976). Finally, culture water should be exchanged consistently to prevent disease (Peabody and Griffin 2008). Through these management techniques, health of the oysters and instance of disease is hopefully reduced. Occasional samples of water should be taken, and bacteriological analysis can be conducted. Health management and caution are both essential in every step of the oyster’s life cycle, and ensures that the water present does not exceed the allowable level of toxin (Peter-Contesse and Peabody 2005).

Grow-out

In the case of the Olympia Oyster, grow-out will usually not take place in the hatchery. Instead, since the main goal is restoration, the shells with spat are dispersed on bottom-artificial reefs. The culture then transforms from an intensive culture (where great care and attention is focused onto growing individuals) to an extensive culture (where little care is given). If the juveniles intended for grow-out are singles or have no substrate, then a variety of mesh bags, panels, or cages can be used in this phase (Lucas and Southgate 2003). From this point on, the Ostrea lurida can be left to grow-out into the adult phase. Occasional monitoring is beneficial, as the constant management allows the farmer to keep track of success rate and health of the population. Some typical methods include counting sub-populations, or predetermined plots of the artificial oyster reef (indicating the number alive, the number dead, and the percent survival), and measuring average shellfish length within the sub-population. Another variable to monitor is the water quality of that particular area. This may include temperature, salinity, pH, turbidity, algae levels, and bacteriological analysis (Flimlin 2003).

If the Olympia Oyster is being cultured for human consumption, it takes approximately 3.5 years for each individual to reach its marketable size. The minimum length ranges from 4.5 cm – 5cm (Korringa 1976). Sexual maturity is reached at age one, where individuals initially become male (Aquatic Species at Risk 2006).

It is not necessary to directly feed the oysters during the grow-out phase. As with the rest of the phases during the oyster life cycle, algae should be consistently present to facilitate filter feeding. If algae growth is not naturally occurring within the artificial oyster reef, then additional mass-cultured algae should be provided to maintain a healthy population. The algae should be a small and unicellular species, with examples including Pavlova and Isochrysis (Lucas and Southgate 2003). In addition, the higher the oyster density, the more phytoplankton required for sufficient feeding of the population. During the grow-out phase, densities can be higher. Higher amounts are allowed because the adults are sessile, or are packaged indefinitely into mesh bag or cages. Therefore, a balance must be maintained between food level and population density (Peabody and Griffin 2008).

Health management is extremely important during the grow-out phase, because a disease break-out can impact the entire population if not properly managed. Therefore, regular bacteriological analysis should be conducted on samples from subpopulations of the artificial reef. If any bacteria or viruses are present, it is necessary to use depuration. The process relocates the oysters to a clean water system with flow-through or UV light for 2 weeks, and provides the opportunity for the population to naturally clean themselves through normal filtration behavior. Finally, meticulous water quality measurements...
must be taken constantly to ensure the area the oysters are feeding in does not contain biotoxins, bacteria, viruses, or anything else harmful in human consumption (Peabody and Griffin 2008).

Cautionary measures should also be taken to prevent biofouling (which can lower the success rate of the oyster population). Biofouling occurs when organisms, such as barnacles or tunicates, attach themselves to the oysters. This occurrence can have a serious impact by blocking the intake of water, by acting as competition with the oyster, or by adding weight to the system as a whole (Nosho 1989). Fouling can be reduced by scraping and scrubbing oysters and oyster bags, and by planting the oysters in the intertidal zone. This placement exposes the oysters to air, therefore reducing fouling, and inducing the production of a harder shell for defense (Lucas & Southgate, 2003). Finally, steps towards reducing predation should be taken. Planting in the intertidal zone is one option, along with physical removal of the predator if the large enough (such is the case with Pisaster or Cancer magister) (Nosho 1989).

Processing & Marketing

The majority of Olympia Oysters are cultured for restoration purposes; however, in the event that they are grown for human consumption, the processing and marketing of Ostrea lurida include various important aspects. Because oysters are filter feeders, there is great concern and caution taken in the bacteria or viruses they can carry, and the illnesses they can cause. The Department of Health (DOH), Office of Food Safety and Shellfish Programs, or a local environmental health specialist can be contacted to inspect the area’s water quality (Nosho 1989). In addition, the Shellfish Sanitation Division of the Health Department should sample a range of oysters from the market, and conduct bacteriological analysis. This form of management will periodically indicate whether or not particular facilities are distributing safe product (Peter-Contesse and Peabody 2008).

In order to ensure the finished product is clean and void of disease, the oyster farmer has numerous options to consider. Firstly, to assure adequate water supply, the method of depuration may be used. Secondly, high pressure methods may be used (though expensive), where the oyster DNA is denatured. Essentially, any bacteria or viruses that may exist within the product will be killed, without needing to cook the oyster itself (Lucas and Southgate 2003). Overall, marketing is considered to be restricted in the oyster industry, mainly due to the fact that small shellfish growers and farm owners are not skilled in sales promotion. Historically, according to Korringa (1976), primarily restaurants along the west coast purchase cultured Olympia Oysters. They are rarely served on half-shells due to their small size, and are instead stored in jars or tins for the use of cocktail oysters. Although rare, Olympia Oysters are occasionally sold on half-shells, and are advertised as a delicacy. In general, even though Olympia Oysters are available for purchase in certain areas, restoration and reestablishment continue to be the main goal when culturing Ostrea lurida. Through these efforts, hopefully the Olympia Oyster can be restored to its original natural range, and eventually serve as a dependable, sustainable food source in the future.
References


Fairy Tales Few Dare to Tell: Breaking Molds and Gender Stereotypes through Sexuality in Lost Girls

Lindsay Brown

“That wide expanse of human awareness and behavior which is loosely signified by the term ‘sex’ provides for the artist a vein so rich that it is never exhausted.” –Rosalind Miles

Introduction

Fairy tales and childhood stories convey society’s expectations about what it means to be a woman. Using beautiful, artistic, colorful renderings and characters that depict female archetypes familiar to audiences within the popular literary cultural context, Lost Girls places gender roles under scrutiny, granting women the opportunity to be sexually voyeuristic and giving both genders good reason to engage in homosexual behavior. In the novel, Alice from Alice in Wonderland (Lady Alice Fairchild), Dorothy from The Wizard of Oz (Dorothy Gale), and Wendy from Peter Pan (Wendy Potter) have all grown up to embark upon a sexual rendezvous for several months of vacation in an Austrian hotel. They retell memorable scenes from their classic stories to each other adding a pornographic twist. Lady Fairchild’s character takes the lead in this erotic escapade, and through her we begin to see how the graphic novel transforms the chaste adolescent Alice figure into a complex, sexually wanton woman jaded by the shattered mold of her early years.

Alice Shatters the Glass

From the onset, the story hoists Lady Alice Fairchild out of her prescribed role. The opening scene entails her and a young woman speaking to one another from a bed. A hidden young woman requests that Lady Fairchild tell her a story. We learn that the young woman is still in fact a child when Lady Fairchild remarks, “your little white breasts, they’re so lovely. They’ll never be as beautiful once you’re grown” (1; ch.1). The bolded word grown draws the reader’s attention to the girl’s yet undeveloped form and establishes the Peter Pan motif of refusing to grow up. This is the very motif Lost Girls is named for and sets the tone that Lady Fairchild struggles with her given aged circumstances. Women are not the usual suspects when it comes to sexual deviance. While it still remains slightly ambiguous at this point whether or not the women are engage in a sexual act, it becomes blatantly obvious in subsequent frames.
Lady Fairchild’s involvement in a lesbian affair, particularly one involving a child, is shocking. Conversely, if the situation were to reverse into that of a man with a young boy, a reader might not be as taken aback. While the man-boy event is not entirely common, it is still repeated enough in society—and subsequently, literature—that it does not carry the same shock value Lost Girls does.

In traditional children’s literature, “the typical female protagonist is weak, demure, passive, in need of rescuing…[her] greatest reward is to become the bride of her prince-rescuer and serve him happily ever after” (Rudman 183). Males are usually the hero, “strong, brave, active, highly extroverted…[initiating] action and [controlling] the situation” (Rudman 183). Therefore, the woman-girl event is one that is unfamiliar and perhaps considered taboo to most audiences.

Lady Fairchild’s name carries undercurrents that seem to work as another device the authors have used to break her out of the stereotypical expectations. Lady Fairchild is neither fair nor child. While she does exude a certain beauty in her face and build, being a woman who is considered fair in literature is most often associated with youth. Lady Fairchild is of later years, closer to seventy than seventeen. The continuous sexual fantasies she indulges in along with her voyeuristic tendencies are something one would not expect from a woman old enough to be a grandmother. Exemplified in the spirit of her name is Lady Fairchild’s archetypal Alice counterpart from the children’s tale, a young girl who takes fantastic risks, exudes independence, and demonstrates tireless curiosity. This not only breaks gender stereotypes, but age ones as well.

The Mirror

The mirror has been in Lady Fairchild’s family since she was a child. As she prepares to move to the Austrian hotel, a conversation with a servant reveals that it is the only possession of real value to her. Through the lens of the mirror, this exchange occurs:

Monsieur Rougeur, Hotel Himmelgarten manager, meets Lady Fairchild for the first time and praises her fiction writing. He states, “as a connoisseur of such literature, may I say that in your ladyship’s hands, fiction becomes the very mirror of reality…where memorable characters reflect our truest selves” (6; ch.1). This operates on the metalevel to show how Lady Fairchild’s persona captures the Alice archetype’s true self, a woman laden with repressed sexual desire.

Juxtaposed to this in the very next scene, Lady Fairchild masturbates in front of the mirror and then asks it how she looked. To the reader’s surprise, the mirror responds. It becomes clear that the mirror is also a character. Fairchild says she wishes to “touch you”, speaking to the mirror as if it were in fact another person. She then professes that “the barrier between [us] doesn’t melt anymore…it doesn’t break”, indicating that like Alice in Wonderland, at some previous
point the mirror could be transfigured into a threshold through which to pass into another dimension, a place of fantasy turned reality (8; ch.1).

The mirror becomes a symbol that encourages the reader to engage in the voyeuristic behavior reflecting on risqué characters in the same way it does, without judgment. With the entire first chapter rendered using the mirror to outline each frame, it reminds the audience that this is an “other” reality, a fictitious plane of existence. Simultaneously, as Rougeur states, and as Alice recounts her ability to step through the looking glass earlier in her life, the graphic novel itself is a reflection of a reality that is or could potentially be. Female fantasy and expression are no longer mutually exclusive entities. They are one and the same in Lost Girls.

Men as the Other

There are few male characters at all in the novel. The main one is the jolly, overweight, self-indulgent hotel manager, Monsieur Rougeur. Throughout the first portion of the novel, while the women are engaged in exploring each other sexually, Rougeur takes a fascination with trying to fly a kite. At first glance, his childish, carefree spirit is endearing. But after several scenes with Rougeur and his toy, the behavior takes on a new life. A kite can only be flown alone, yet the undertaking eludes him. Dorothy mockingly asks, “Havin’ trouble getting’ your kite offa the ground?”, to which Rougeur replies, “Haha! It was easier to launch this hotel” (1; ch.7). Embarking upon a risky business venture that involves much assistance from others is no match for the solo task of getting simple kite up in the air. The kite become as phallic symbol, and extension of Rougeur, recreating a masturbation scenario disappointingly impossible for him to achieve. Failure to launch takes all the fun out of flying a kite.

Later, we see Rougeur’s kite abandoned in a fountain. The kite, adorned with a boy riding on the back of a koi fish, play son both the expression “fish out of water” and the word “coy”. Rougeur, too timid to succeed, gives up; he places his fish in a more appropriate element, away from his incapable hands. This scene proves to be a metaphor for the manager’s inability to perform the childlike, basic function of self-pleasure, thereby emasculating the man and reducing him to a joke, which the women pick up on immediately. This renders Rougeur sexually incompetent, and as one of the main (and only) male characters in the book, begs the question, what do women need men for at all?

This makes sense considering the novel centers around female expressions of sexual power. Their primary function is to give one another pleasure. Suzanne Pharr, in her article on homophobia, comments on perceptions of homosexuality in our society:

A lesbian is perceived as being outside the acceptable, routinized order of things. She is seen as someone who has no
societal institutions to protect her and who is not privileged to the protection of individual males. Many heterosexual women see her as someone who stands in contradiction to the sacrifices they have made to conform to compulsory heterosexuality. A lesbian is perceived as a threat to the nuclear family, to male dominance and control, to the very heart of sexism. (88)

Indeed, Alice in Lost Girls has evolved into a full-fledged lesbian, in part due to her first sexual encounter as a young girl when she was molested by her father’s hurried “white hair” friend, “Bunny” (2; ch. 9). This white rabbit led her down a transcendental hole, “an inverted world where nothing made sense in the way it once did” (8; ch.9). Her perspective carries the plot forward and guides the other women in the story to partake in her homoerotic adventures. Women become saturated in sexual prowess for themselves and one another. They take control in the pornographic, female-centric narrative, adopting a dominant role once reserved for men. Perhaps it is Lady Fairchild’s way of reclaiming her stolen youth.

There are several more examples of inverted gender dominance and propensity toward homosexuality. In chapter 12, Alice rapes Wendy. Mr. Potter, Wendy’s husband, cast as an old prude, is seduced into having sex with an effeminate man in chapter 13. In an account expanding upon Dorothy’s story, she reveals an incident with a young man from her childhood who she had engaged in an affair with.

Exciting at first, Dorothy quickly grew bored of their tryst stating, “I wanted to be doin’ it with somebody who had real thoughts and feelin’s just like I did…I might as well have humped a ragdoll, or somethin’ you stick out in a field to scare the birds” (5; ch.14). The young man was akin to Oz’s Scarecrow, void of a brain. This seems to be a response to Mr. Potter’s attitude revealed toward Wendy in a previous chapter. In a letter he comments on his wife, stating, “she’s like most women. Rather soft. A bit wet. Sometimes, you know, I wonder what [women] find to think about. Not like us chaps, of course, we’re always thinking about something. Think, think, think, think, think. I tell you, sometimes it’s B----- exhausting.” (6; ch.11). One the one hand, both genders have an opinion that the other gender is mentally deficient. On the other, both are driven toward homosexuality seemingly from that opinion.

The novel ends when hotel guests are forced to evacuate due to the onset of World War I. This war, caused by men and fought by men, ceases the female fantasy entirely. When the women make their exit, Lady Fairchild leaves her mirror behind. One of the last frames shows a male soldier shattering Alice’s treasured family heirloom with the grip of his large gun. This symbolic gesture is profound.
The gun is another representation for the phallus and using it to destroy the lens which allows for female fantasy highlights society’s patriarchal mindset that seeks to suppress an alternative reality. However, the final word is given when an image depicting a fallen soldier with his core insides blasted and pouring out of him ends the novel. This implies that the very patriarchy which suppresses the female counterpart will be its own demise.

**Conclusion**

The effect of this novel not only deconstructs stereotypical notions of how females ought to behave using the antithesis of the conventional, but on a larger level it ascends the inner sexual being classic literature has suppressed until now. It forces them—and therefore, us—to grow up. Alan Moore and Melinda Gebbie’s style provides pornographic shock value directed at adults employing vulgar, risqué, and unconventional yet aesthetically pleasing artwork to both seduce and numb the reader into readily accepting a reconstructed female identity, one that places women’s sexual power onto a more equal playing field with the male counterpart while simultaneously steering them away from one another. This presents an option to the canon that has the capacity to promote powerful social change. (The discourse become open to the possibility anyway).

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**Works Cited**


The Language of Homophobia: Word Choice in Anti-Gay Propaganda

Britney Carey

I. Introduction

Blumenfeld (1992) defines heterosexism as “both the belief that heterosexuality is or should be the only acceptable sexual orientation and the fear and hatred of those who love and sexually desire those of the same sex” (p. 15). As a consequence of heterosexism and the manner by which it is spread (through fear and hatred), prejudice and discrimination against the LBGT (lesbian, bisexual, gay, and transgender) community have become a modern phenomenon (Blumenfeld, 1992, p.15). Heterosexism is perhaps most apparent in the propaganda of anti-gay organizations. According to the Southern Poverty Law Center, or SPLC (2010), conservative Christian groups have been among the most critical opponents of equal rights for gays and lesbians for the past thirty years (para. 1). The leaders of such groups claim that the gay rights movement is a threat to American society and culture; some have even gone so far as to declare this struggle against gay rights a “second civil war” (SPLC, 2010, para. 2). Of the various strategies the Christian Right has in its arsenal, perhaps the most questionable has been the defamation of the LBGT community (SPLC, 2010, para. 3). As the SPLC (2010) notes, these individuals have been described as “‘perverts’ with ‘filthy habits’ who seek to snatch the children of straight parents and ‘convert’ them to [homosexuality]” (para. 3).

There is no question that language can be a powerful tool of persuasion. It appears that many anti-gay organizations are turning more and more to rhetoric and specifically-worded propaganda as a means of gathering supporters. This paper will examine the language used in publications and websites supported and/or distributed by several anti-gay organizations in an effort to show how specific and calculated language is utilized as a means of persuasion by these groups.

II. Data/Analysis

II.i. Data Set 1: Focus on the Family “Answers”

The Christian ministry Focus on the Family (FOTF), an organization dedicated to the promotion and continuance of the nuclear family, maintains a website (focusonthefamily.com) which includes an “answers” page where website visitors may post questions concerning any aspect of family or Christian life (FOTFa, 2010, para. 1). The first sets of data (see Appendix A for the full texts of each question/answer set) examined in this paper come from this area of the website.

In the first question/answer set, the author replies to a question concerning special rights for homosexuals (FOTF, 2010b). In response the author writes, “What if a pedophile (child abuser) could claim that he inherited his lust for kids?” (FOTF, 2010b, para. 3). The use of the term “pedophile” suggests a sinister connotation which evokes images of unspeakable actions. Thus, when pedophilia is coupled with the idea of homosexuality, even in a seemingly detached manner as in this case, the author is equating pedophilia with homosexuality. The rest of the passage is sprinkled with word like “lust,” “offensive,” “Scripture,” and “God,” (FOTF, 2010b, para. 3). It may
be argued that these words, especially in the Christian faith, all have some element of fear attached to them, and that the author has chosen these words for the specific purpose of instilling fear to elicit obedience.

The author also uses “perversion,” “immoral,” “reprehensible,” and “flawed” which suggest to the reader that homosexuality is something devoid of morality; it is a state which is utterly appalling and should be avoided on all accounts. Perhaps with the exclusion of “flawed,” these words also carry with them an element of fear, specifically a fear of punishment.

The second question/answer set from FOTF is similar to the first. In response to a question about whether or not homosexuality is an inherited trait, the author writes,

It is more likely to be related to one or more of the following: (1) confusion of role models seen in parents… not limited to, a dominant mother and a weak or absent father…; (2) serious family dysfunction that wounds and damages the child…; (4) the influence of an older homosexual during a critical period of adolescence; (5) conscious choice and cultivation; and/or (6) homosexual experimentation… Scripture refers to epidemics of homosexuality and lesbianism that occurred in specific cultures… Men committed indecent acts with other men, and received in themselves the due penalty for their perversion…I don’t believe [God] would speak of homosexuality in the Scriptures as an abominable sin and list it among the most despicable of human behaviors if men and women bore no responsibility for engaging in it (FOTF, 2010c, para. 3)

The use of the terms “confusion” and “influence” implies the idea that homosexuality is something that only happens to weak-minded people. The author uses the phrases “dominant mother” and “weak or absent father” as a reinforcement of the family structure and values which the organization supports. “Dysfunction,” “wounds,” “damages,” and even “experimentation” again paint homosexuality as an unnatural and risky behavior which may lead to negative impacts on the health of the individual and those around them. The use of the loaded word, “epidemics” seems to go as far as to equate homosexuality with a disease.

Through the use of “conscious choice” and “cultivation,” it is implied that homosexuality is something that requires maintenance; it is not the normal sexual orientation for a human being so it must be developed and encouraged. The use of such terms seem to suggest that because homosexuality is a personal choice, not one that is inborn and unchangeable, LBGT individuals are not entitled to the same civil rights as those afforded to citizens on the basis of inborn characteristics such as race and sex. This belief is also promoted by another Christian organization, the Family Research Council (FRC; Sprigg, 2007, p. 3-4).

As seen with the first set, the terms “God” and “Scriptures” aid in the persuasion of the reader through fear, as do “abominable sin” and “penalty.” The author’s mention of the fact that homosexuality is listed in the Bible as “among the most despicable of human behaviors” is another effective tool of scaremongering.

II.ii. Data Set II: Excerpts from Coming Out of Homosexuality

The second sets of data examined in this paper are from Coming Out of Homosexuality: New Freedom for Men and Women, a book by Bob Davies and Lisa Rentzel, in which the authors attempt to show homosexuality is not set in stone; that one may be, effectively, cured of it. For instance, Davies and Rentzel (1993) write, “For the man or woman struggling with homosexuality, there is hope for healing and new freedom in Christ!” (p. 14) The terms “struggling” and
“freedom” enhance the overall meaning of the sentence by implying that homosexuality is a burden and an affliction to be overcome.

The authors’ stance on the idea of love in homosexual relationships is obvious in the line, “Then Mike ‘fell in love’ with another man and they began a long-term relationship” (Davies & Rentzel, 1993, p. 9). The fact that the phrase “fell in love” is in quotation marks conveys the message that true and genuine love between two people of the same sex is not possible.

Davies and Rentzel (1993) go on to claim that “For people getting out of drugs, alcohol, or even prostitution, Christian counseling and support were plentiful. For the man or woman trying to break out of homosexuality such counseling was almost nonexistent (p. 14-15).” This sentence essentially equates prostitution and addiction with homosexuality, in effect deeming it a social taboo or even a disease.

II. iii. Family Research Council's Stance on Homosexuality

On its website (frc.org), under the headline “Issues,” one may find the FRC’s position on homosexuality (see Appendix B for the full text). The statement reads, “Family Research Council believes that homosexual conduct is harmful to the persons who engage in it and to society at large, and can never be affirmed. It is by definition unnatural, and as such is associated with negative physical and psychological health effects” (FRC, 2010, para. 8). The terms “harmful” and “unnatural,” along with the phrase “negative physical and psychological health effects,” constructs for the reader a specific picture of homosexuality: that it is a behavior which puts the health of homosexual individuals and those around them at unnecessary risk.

The FRC (2010) goes on to say that “attempts to join two men or two women in ‘marriage’ constitute a radical redefinition and falsification of the institution” (para. 8). The fact that “marriage” is enclosed by quotation marks suggests that the FRC believes (and wants its readers to believe) that same-sex “marriage” is not equivalent to heterosexual marriage. In effect, the use of quotation marks mocks the gay rights movement’s campaign for same-sex marriage; as far as the FRC is concerned, even if same-sex couples were allowed to wed, it would still not constitute marriage.

Finally, the FRC (2010) insists that “sympathy must be extended to those who struggle with unwanted same-sex attractions, and every effort should be made to assist such persons to overcome those attractions, as many already have” (para. 8). The use of “sympathy,” “unwanted,” and “overcome” suggests to readers that all LBGT individuals are in need of support and help. In this way, the FRC reaffirms its own belief that homosexuality is not a natural state of being; the only reason one would feel sympathy for, or give assistance to an individual is if that individual is experiencing something undesirable and unfortunate.

II.iv. Family Research Institute, excerpt from Public Policy Article “Can Anything Be Done to Stop Gay-Rights?”

The Family Research Institute (FRI) was founded by Paul Cameron, a psychologist, in 1987 (Schlatter, 2010, para. 55). The SPLC has labeled FRI as a “hate group” in response to its anti-gay propaganda (Schlatter, 2010, para. 55-59). The FRI has posted several articles on its website which explain the organization’s position on different issues (FRI, 2009a). In one such article, “Can Anything Be Done to Stop Gay-Rights?”, the FRI (2009b) writes,

Gay rights is also a cause of civilization’s decline. Homosexuality is a unique manifestation of hedonism. Instead of producing children, it preys on them. Instead of keeping to itself, it proselytizes. Instead of promoting health and stability (as does marriage), it thrives on aggression, spreads disease, and destroys its
practitioners, emotionally and physically. (para. 2)

This passage is perhaps the most aggressive and antagonistic of those presented thus far. Instead of alluding to or shrouding their intentions in rhetoric, the FRI’s message here is straightforward. For example, “a unique manifestation of hedonism” informs the reader directly that homosexuality is something to be condemned by man, and even by God.

The third and fourth sentences of the paragraph, which make begin with the phrase “instead of,” suggest to the reader that rather than encouraging what is socially acceptable (procreation, modesty, and wholesomeness), homosexuality will, essentially, be the downfall of modern society. The repeated use of this sentence form is a very effective means of persuasion; the author uses this repetition to drive the message of the sentence home.

The word choice employed in this passage is also an effective means of persuasion. The use of “prey,” “proselytizes,” and “aggression” depicts homosexuality as a rampant monster bent on the conversion of all mankind. The author could have used “recruits” instead of “proselytizes,” but the former does not carry with it the same religious connotations. Again we see the term “disease,” and “destroys,” both of which imply that homosexuality is something to be avoided.

II.v. NARTH’s Journal of Homosexuality

The National Association for Research and Therapy of Homosexuality (NARTH), claims to be a “professional, scientific organization that offers hope to those who struggle with unwanted homosexuality” (NARTH, 2008, para. 1). The organization produces a journal consisting of articles which address issues of sexuality, especially that of homosexuality (NARTH, 2009). In a summary of one article, it is claimed that,

Treatment success for clients seeking to change unwanted homosexuality and develop their heterosexual potential has been documented in the professional and research literature since the late 19th century. What Research Shows reviews 125 years of clinical and scientific reports which document that professionally-assisted and other attempts at volitional change from homosexuality toward heterosexuality has been successful for many and that such change continues to be possible for those who are motivated to try. Clinicians and researchers have reported positive outcomes after using or investigating a variety of reorientation approaches (NARTH, 2009, para. 3).

Although NARTH claims to be an objective and academic organization based in science, there are obvious similarities between its published materials and those of more religiously motivated groups. The word choice employed in this passage, for example, is reminiscent of many of the texts already presented in this paper. The term “treatment,” for example, is rarely used without relation to some kind of disease, ailment, or condition. This tactic (equating homosexuality with disease) is, as we have seen, repeatedly utilized in all of the texts presented thus far. “Unwanted” is another term repeatedly used in these texts.

NARTH, however, does supply three new terms: “potential,” “motivated,” and “reorientation.” While these words are less emotionally charged, and (seemingly) more scientific than those previously discussed, the motives behind their usage are just as questionable. “Potential,” at first glance, seems like a positive word. Taken in context, however, we see that it is, in fact, dripping with persuasive rhetoric. The idea that clients may “develop their heterosexual potential” tells the reader that homosexuality is a less-desired, perhaps even inferior, sexual orientation than heterosexuality.

“Motivated,” like “potential” is a term rarely attached to anything negative. In this context, however, it may be taken to imply
that LBGT individuals who do not seek “treatment” are somehow apathetic about their lives. The idea that “change continues to be possible for those who are motivated to try” does not fairly address the issue: not all LBGT individuals wish to change their orientations; this sentence does not allow for this possibility.

The use of the final term, “reorientation,” asks the reader to assume several things. First, it implies that there was a point at which an LBGT individual was a heterosexual. According to the American Heritage Dictionary, the prefix “re-,” means “again” or “back” (p. 696). To “reorient” something, then, would mean to place it back where it once was. This term also implies that because heterosexuality is the state to which LBGT individuals must “reorient” themselves to. In this sense, NARTH is implying that heterosexuality is the natural sexual orientation for all human beings, and homosexuality, therefore, is unnatural.

Although the language used in NARTH’s publications is somewhat more neutral than those of the other organizations presented in this paper, the rhetoric employed serves the same purpose: to persuade readers that a homosexual orientation is unnatural and can, and, even should, be changed.

III. Conclusion

As Pennycook (2001) suggests, there is a definite connection between language and power (p. 73). Conservative Christian groups and other anti-gay organizations are aware of this relationship, and are using it to their advantage. As has been shown, the language used in texts published by several of these organizations, as well as that of publications listed as resources by these organizations, contain elements of persuasiveness made effective mostly through the fearful reactions which they elicit. Through the use of specific words and phrases, these texts paint an extremely biased picture of homosexuality that is obviously designed to satisfy a specific agenda.

It is hard to know whether this linguistic manipulation is subconscious or deliberate, but there is no question that rhetoric is often misleading, and, at times, entirely incorrect. The fact that so many people accept these statements as the truth is a testament to the power of language.
Works Cited


APPENDIX A:
Question/Answer Sets from
Focus on the Family Answers Page

1. Question/Answer Set 1:
Question: “Homosexual activists claim their lifestyle, which in some cases includes thousands of sexual partners, should be sanctioned, protected, and granted special rights by society. Their rationale is that since their sexual nature is inherited, it is involuntary and therefore should be considered morally neutral. Would you critique this stance?” (FOTF, 2010b, para. 1).

Answer: What if a pedophile (child abuser) could claim that he inherited his lust for kids? He could make a good case for it. Certainly his sexual apparatus and the testosterone that drives it are creations of genetics. Even if his perversion resulted from early experiences, he could accurately claim not to have chosen to be what he is. But so what? Does that make his abuse of children any less offensive? Should society accept, protect, and grant special civil rights to pedophiles?... No! The source of their sexual preference is irrelevant to the behavior itself, which is deemed to be immoral and reprehensible by society. Being genetically inclined to do immoral things does not make immoral behavior right. There are many influences at work within us, but they are irrelevant. I know of no instance in Scripture where God winked at evildoers because of their flawed inheritance or early experiences (FOTF, 2010b, para. 3).

2. Question/Answer Set 2:
Question: "Would you indicate whether or not you believe it [homosexuality] is inherited? I have reviewed studies conducted in recent years that seemingly indicate it is in the genes and is therefore involuntary. Do you agree?” (FOTF, 2010c, para. 1)

Answer: It is more likely to be related to one or more of the following: (1) confusion of role models seen in parents, including, but not limited to, a dominant mother and a weak or absent father; (2) serious family dysfunction that wounds and damages the child; (3) early sexual abuse; (4) the influence of an older homosexual during a critical period of adolescence; (5) conscious choice and cultivation; and/or (6) homosexual experimentation... How do these and other forces interplay in individual circumstances? I don't know. I don't think anyone knows... Scripture refers to epidemics of homosexuality and lesbianism that occurred in specific cultures... Men committed indecent acts with other men, and received in themselves the due penalty for their perversion. (That final sentence sounds like the transmission of sexually transmitted diseases, doesn't it?)... God is infinitely just. I don't believe He would speak of homosexuality in the Scriptures as an abominable sin and list it among the most despicable of human behaviors if men and women bore no responsibility for engaging in it (FOTF, 2010c, para. 3, 4).

APPENDIX B:

1. The following is the Family Research Council's position on homosexuality:

Family Research Council believes that homosexual conduct is harmful to the persons who engage in it and to society at large, and can never be affirmed. It is by definition unnatural, and as such is associated with negative physical and psychological health effects. While the origins of same-sex attractions may be complex, there is no convincing evidence that a homosexual identity is ever something genetic or inborn. We oppose the vigorous efforts of homosexual activists to demand that homosexuality be accepted as equivalent to heterosexuality in law, in the media, and in schools. Attempts to join two men or two women in "marriage" constitute a radical redefinition and falsification of the institution, and FRC supports state and federal constitutional amendments to prevent such redefinition by courts or legislatures. Sympathy must be extended to those who struggle with unwanted same-sex attractions, and every effort should be made to assist such persons to overcome those attractions, as many already have. (FRC, 2010, para. 8)
The War of Jenkins' Ear
Jingoistic mercantilism, pacifistic diplomacy, and securing of the Georgia border.

Robert Franklin

In The Diplomatic History of Georgia, John Tate Lanning wrote that “the mention of the War of Jenkins’ Ear evokes from the average individual either frank laughter or courteous blankness,” a statement that can still be considered valid today.1 There is more to the War of Jenkins’ Ear than a declaration of war over the injustices suffered by Robert Jenkins in 1731 that caused him to lose that vital appendage. Rather, it was a combination of ambitious colonial expansion on behalf of England in Spanish Florida, and the inability to solve a decade of conflict over trade rights in the West Indies that gave birth to a jingoistic and proto-nationalist sentiment which forced conservative Member of Parliament (M.P.) Robert Walpole to declare war on Spain in 1739. Robert Jenkins’s ear merely played a role, albeit a large one, in the rise of anti-Spanish sentiment in England and the subsequent decade of war that followed. The War of Jenkins’ Ear also marked the first time that English colonists in America were involved in warfare in other areas of the English empire, and the conflict between ‘English’ and ‘American’ forces spawned lasting resentments on both sides that contributed to the formation of these separate identities during the colonial period. In this analysis, the light will be cast unevenly on the English, due to the privations committed against the Englishman Robert Jenkins, and the role of both James Oglethorpe and the South Sea Company in their agitations for war against Spain.

The creation and settlement of the English colony of Georgia caused a significant amount of tension between the English and Spanish in the 1720’s and 1730’s. The first English settlements in Georgia date back to 1720, with King George’s order to South Carolina governor, Francis Nicholson, to send a contingent of troops to secure and build a fort at the head of the Altamaha River in Spanish Florida.2 The text of the resolution, which stated that Nicholson was “not to suffer any other nation to take possession of any Part of the said River, or of the Sea Coasts from Port Royal to St. Augustine,” virtually ensured immediate conflict.3 In 1670, England and Spain signed the American Treaty adopting the principle of actual possession, meaning that the two countries could only claim territory where they had a physical presence in 1670. The English claim to Georgia was in direct violation of the American Treaty, but the English pressed on with claims to the disputed territory. Spain immediately protested to the English, who chose to remain silent on the American Treaty and instead held up the Carolina grant of 1665, in which Charles II granted land as far south as St. Augustine.4 The Spanish protestations that the English destroy the fort inadvertently came to pass when the fort burnt down in 1725 and was not rebuilt, although the English did not give up their designs for the territory that would come to be known as Georgia. The destruction of the fort pleased many in the English government, especially those who wanted peace, security of trade, and the limited budgetary expenditures it entailed. This pacifistic part of the English government is known as the Walpole ministry, named after M.P. Robert Walpole, who would play a large role in the events leading up to the War of Jenkins’ Ear.

The opposition to Walpole looked
abroad and saw the need for England to expand its holdings in the Americas at Spanish expense. These ‘imperialists’ were prevalent in both South Carolina and the House of Commons, and as far as the disputed territory was concerned were personified by one man, James Oglethorpe. The opposition, led by Oglethorpe, petitioned and was granted a charter on June 9, 1732 to settle the territory named Georgia in honor of King George.5 Georgia was ostensibly promoted by its trustees as a “colonial workhouse to redeem England’s idle poor”6 but “[Under] Oglethorpe’s leadership Georgia as a religious and philanthropic undertaking took second place to Georgia, the imperialistic colony.”7 From the beginning, the colony was threatened with Spanish attack, a perilous situation due to the skeleton force possessed by Oglethorpe in the Savannah area and the reports that the Spanish were stockpiling arms and troops in St. Augustine in preparation for an invasion. It was common knowledge that Walpole did not approve of the Georgia colony and the developing situation therein, but his options were limited as all of the Georgia trustees were members of the House of Commons and Walpole needed their support for his trade policies.8 By 1737 Oglethorpe was back in England, unsuccessfully arguing for more protection for the colony in the form of British troops. Word soon came that Spain had attacked with six hundred soldiers, and they had been repulsed by the threadbare Georgia defense. Oglethorpe could not have asked for a timelier boon. Walpole reluctantly approved a regiment of troops, with Oglethorpe at its command, to be transferred to the colony.

Walpole’s negative position regarding the Georgia colony had more to do with its interference in peaceful trade relations with Spain than it being in the interests of his enemies in the House of Commons. Walpole saw little advantage to the Georgia colony; it brought little to no revenue, and it caused his ministry a great deal of worry and ink with the constant diplomatic tension with Spain. In August of 1737, the Spanish Minister Don Tomás Geraldino sent Walpole a memorial detailing all the English depredations to the time of writing, and stating that if Oglethorpe was to return to Georgia it would be considered an act of war.9 Oglethorpe returned later that year as the “General and Commander in Chief of all…his Majesty’s Forces…in his Majesty’s Provinces of South Carolina and Georgia in America.”10 The Spanish did not make good on their threat at this time. Tensions in Europe between England and Spain continued to rise, with both Georgia and Spanish Florida fearing an attack by the other. In December of 1737, in response to a letter concerning claims to the disputed area by the English Minister in Madrid, Benjamin Keene, Oglethorpe replied that he believed since the English “were in actual and quiet possession of Georgia, it was incumbent upon the Spanish to make out and prove their rights.”11 In the words of Lanning, “The onus of proof was the lot of the plaintiff.”12 Reports of attack from Spanish Florida, which was a constant worry in the disputed Georgia territory, steadily increased in the early months of 1738. Adding to the tension were two reports that Oglethorpe sent to officials in London: the Spanish had landed five thousand men in Georgia, and that two Spanish men-of-war seized an English ship off the coast of Carolina –both of which proved to be false and infuriated both the Spanish and Walpole.13 To reduce tensions the English drafted numerous treaties of goodwill but the Spanish refused to sign—by signing any treaty of peace they would be giving up any future claim to Georgia, thereby ceding that vast territory to the English. Further contributing to the tensions were the South Sea Company merchants and their allies in Parliament, who were chaffing over the Spanish tightening of trade restrictions in the West Indies and the seizing of English ships beginning in the early 1730’s—the source of the offense against Captain Robert Jenkins.

During the eighteenth century the
Spanish were slowly losing the ability to supply their colonies in the West Indies and relied on contracts with other merchant companies, which were usually state controlled monopolies. One of these was the British owned South Sea Company (SSC), which was formed under the 1729 Treaty of Seville with Spain to carry out the asiento contract. The asiento was an especially lucrative contract, allowing the SSC to supply an unlimited number of slaves and five hundred tons of goods per year to the Spanish territories in the West Indies. This trade was extremely important to the Spanish and profitable to the SSC, however, tensions started to arise as early as 1732 over unpaid duties on Negroes, and accusations that the SSC was carrying on an illegal trade with Spanish colonies. English piracy based out of Jamaica was active before this date and Spanish guarda costas (coast guard) spent much time patrolling the West Indies and indiscriminately seizing British and Colonial ships. The SSC were the only English merchants allowed to conduct business with the Spanish in the West Indies, and thus they were blamed for these pirate activities. However, this indiscriminate seizing by Spanish ships also reeked of piracy and was interpreted as such by English colonial officials and merchants. The two home governments devoted a good deal of time trying to soothe tensions in the West Indies, doing their best to control restive colonial officials to the point of exasperation, which can be seen in a letter by Rear Admiral Charles Stewart to the Duke of Newcastle dated 12 October 1731:

"It is, I think, a little unreasonable for us to do injuries and not know how to bear them. But villainy is inherent to this climate, and I should be partial if I was to judge whether the trading part of the island or those we complain of among the Spaniards are the most exquisite in the trade..."

I was a little surprised to hear of the usage Captain Jenkins met with off the Havana, as I know the governor there has the character of being an honest good man, and I don't find anybody thinks he would connive or countenance such villainies.

I can't help observing that I believe that I am the first military person who has stood up in [defense] of peace and quietness, and for delivering up vessels, against a parcel of men who call themselves merchants, but except two or three of them that have signed the letter, they are no better than [peddlers], and one of them formerly in jail for piracy.

By 1735, the constant piracy and disagreement over unpaid duties led the Spanish to suspend the importation of Negroes. In early 1736, with no resolution, the Spanish king suspended all trade between the crown and the SSC until the duties were paid and the accounts of the annual shipments were given to the Spanish court. Both countries now filed claims against each other: Spain claimed the unpaid duties and loss of revenue from English pirating at £65,000, and the English claimed the money lost from the Spanish cancellation of the asiento and damages from Spanish pirating at £140,000. After negotiations between English and Spanish officials in 1739, Spain was left with a net debt of £95,000, which the king refused to pay based on SSC refusal to pay the Spanish estimate of an additional £68,000 in assorted damages by the company. Combined with the perilous situation in the Georgia colony this disagreement gave an opportunity to the enemies of Walpole to push for a war that would, they thought, humiliate the Spanish and gain territory and wealth for England.

The English opponents of Walpole now took the offensive in 1738 by accusing his ministry of pro-Spanish pacifism regarding both the Georgia and West Indies issues.
and attempting to root out any pro-Spanish sentiment in English society. Even the former darling in the “Opera of the Nobility,” the famous Italian castrato Farinelli, was criticized in the English press for singing to the King of Spain, claiming his “detainment” in Madrid was almost identical to Spanish seizures of English ships. The rhetoric was even stronger in Parliament, as can be seen when Lord John Carteret rose to speak in mid-1738: “‘No search,’ my Lords, is a cry that runs from the sailor to the merchant, and from the merchant to Parliament, my Lords, it ought to reach the throne.” The rallying point came in March 1738 with the appearance of Captain Robert Jenkins of the Rebecca before parliament. Having studied for his role, Jenkins played his audience with a Farinelli-like aplomb; displaying his now pickled ear, which he had lost seven years previously at the hands of the Spanish captain Juan de León Fandino, in a jar of spirits. The account is best narrated by John Tate Lanning:

After the Spaniard had torn his ear off, Jenkins related, he handed it back with the well-phrased insult: “carry it to your king and tell his majesty that if he were present I would serve him in the same manner.” Asked what he expected from his enemies Jenkins replied in seemingly well-coached language: “Gentlemen, after mangling me in this manner, they threatened to put me to death. I expected it, and recommended my soul to God, but the revenge of my cause to my country.”

This story was told and retold throughout the English press, working public opinion into a raucous state of anti-Spanish fervor.

The Walpole ministry moved into maximum damage control mode while trying to preserve the peace at almost any cost. Spanish and English ministries worked in early 1739 to hammer out the Convention of Pardo, which set to preserve the status quo and establish a future meeting where the trade agreements could be settled. This fell apart when both the Spanish King and Parliament refused to ratify the convention, and it now appeared to both sides that war was imminent. Walpole immediately tried to align himself behind the pro-war faction, stating that “the Spanish shall not have Georgia” and pledging both troops and money to defend the colony. This was to be too little too late, as a vociferous William Pitt stole the attention for the next few months in Parliament and emerged at the head of the anti-Walpole faction. King George then threw his support behind the war faction and formally declared war on June 15, 1739, followed by ratification in Parliament on October 23, 1739.

Oglethorpe, who received news in late September that diplomatic relations with Spain had broken down, had himself preemptively declared war on October 3, 1739 in the Savannah, Georgia courthouse. The nearby Creek Indians, unhappy with Spanish relations with their neighboring tribes and traditional enemies, had been receptive to English offers of friendship and now pledged their support to Oglethorpe. The Spanish were first to strike, using their Indian allies to make raids on the English fort on Amelia Island and other English traders working in the area. Sensing that the Creeks were eager for retribution and to gain trophies and captives, Oglethorpe sent out a war party to scout the area, an essential job that the Creeks fulfilled during the hostilities in Georgia. Creeks, larger in number than other neighboring tribes and better supplied by the English, harassed both the Spanish and their Indian allies so effectively that for the most part the Spaniards were afraid to leave their forts, biding Oglethorpe precious time to assemble an expeditionary force. Marching on St. Augustine in May 1740, Oglethorpe’s force took several forts along the way but ended up waging an unsuccessful siege and had to returning to Fort Frederica several months later. While Oglethorpe did not have the number of men that he requested from South Carolina and the Creek, he was not undermanned.
compared to the Spanish. Rather, his loss was a result of misunderstanding his Indian allies. Oglethorpe forbid the Creek to practice the type of guerilla warfare that they were used to, instead molding them into a British model by integrating them with the rest of the army and forcing them to adopt European war tactics. Rather than producing the harmonious effect he desired, this move caused disagreements and delays in the entire army.

Safely back in Fort Frederica, Oglethorpe now feared a Spanish reprisal and fortified his defenses to the best of his limited ability. Adding to Oglethorpe’s worries were strained relations with his Indian allies who had not been allowed to collect trophies or slaves on the march to St. Augustine. To solve both of these problems Oglethorpe consented to allow the Creeks to fight in their traditional way, again causing panic amongst the Spanish and their allies, and biding the English valuable time. The Spanish counterattacked in May 1742 but the English won the battle: the English charged the Spanish force head on and the latter, cut down by Creek guerrilla warfare, eventually fled back to St. Augustine.29 Oglethorpe feared that the Spanish, cowed but not defeated, would strike again and so the next year he set out for St. Augustine. This time he allowed his Creek allies greater autonomy, and although the second siege of St. Augustine was again ineffective, the Creek engaged in massive raiding of the countryside on such a scale that the Spanish abandoned any hope of attacking Georgia. By compromising on tactics Oglethorpe was able to please his Creek allies and secure the defense of the Georgia colony during the War of Jenkins’ Ear.

Outside of Georgia, the English wasted no time in launching an attack on Spanish possessions in the West Indies. A fleet of six ships, under Admiral Vernon, sailed to Porto Bello on the west coast of Panama. The final resupply point for Spanish treasure ships heading east, Porto Bello was inadequately prepared for the attack and the English were able to take the fort with minimal casualties. The reality that “forts had been undermanned and the booty small were facts unknown and inconsequential” to the English public, who erupted in a frenzy of patriotism and joy.30 Vernon now sailed for Jamaica to await the mass of forces being sent from England and the Colonies. Joining a 9,000 man force of British regulars was a diverse group of 3,000 motley Colonials. The War of Jenkins’ Ear marked the first time that men who could be considered ‘American’ were called to defend another part of the British Empire, i.e. “an area not in or adjacent to their homes.”31 Considered by Albert Harkness Jr. to be the “first Veterans of Foreign Wars,” these men were an all volunteer force raised under different conditions and terms of pay in the colonies.32 One thing they did all have in common was the distrustful and disparaging treatment they received by their British superiors. The Americans were characterized as “poor soldiers, Irish Papists, and fit only for cutting fascines with the Negros”33 by the British, and it is no surprise then that a deep distrust and animosity began to develop between the men serving on the ships and in the integrated units. Much of the correspondence from the British features the term “Americans” to negatively describe the colonial troops, and while this usage is not the first by any means, it does appear quite frequently.34 There are only a few instances of the ‘American’ troops terming their English counterparts as “Europeans” or “English,” but this is probably due to the limited amount of correspondence made by the ‘American’ troops. Their treatment of each other is indicative of separate identities forming over thirty years before the American Revolution and no doubt contributed to emerging tensions back in the colonies when the survivors of the West Indies battles arrived home in 1743.

The colonial troops arrived in Jamaica several months before the British army and suffered high numbers of casualties from tropical diseases, forcing Vernon to break-up and reform many of the colonial
companies, further causing frustration and resentment among the Americans. Finally setting off in early February 1741 the fleet sailed to Cartagena, the capital of modern day Columbia, to attack the Spanish fort there. Better defended than Porto Bello and forewarned of English attack, the English assault on Cartagena also suffered from miscommunication between Admiral Vernon and Commander of the Army, General Wentworth. This is not to say that the colonials did not contribute to the assault, on March 18-19 Lawrence Washington, the elder half-brother of the future Commander of the Continental Army George Washington, led two colonial companies on daring raid of a Spanish battery. The colonials were treated poorly by their English superiors who considered them worth no more than Negro slaves. The colonial troops were kept below decks for most of the voyage and the attack on Cartagena thus suffering disproportionately high rates of sickness and death. After the disastrous defeat at Cartagena, Admiral Vernon sailed first to Jamaica to resupply, where more colonial troops fell to disease during the month-long layover, and then set sail to Hispaniola (Cuba). Landing in Guantanamo Bay on June 30, 1741, the English force fought off the small Spanish garrison and set up camp and crude fortifications, waiting for Spanish reprisal. However, the continued bickering between Vernon and Wentworth, loss of men due to disease, and a general lack of interest by the Spanish forced the English force to depart several months later. The battered and reduced fleet then sailed for Panama, but decided not to land after sighting hostile natives, and later made its way to Roatán, a small island off of Honduras and a haven for Spanish pirates. Finding no pirates, Vernon and Wentworth decided to claim the territory for England, establish a fort with a small volunteer garrison, and then return to Jamaica and later to Britain. The American companies were then dispersed; many sought treatment in the naval hospitals in Jamaica but the majority of them were free to go back to the colonies, although they had to find their own transportation. The men that perished in the West Indies were not the only losses suffered for the colonies: between 1739 and 1741 an estimated fifty Spanish privateers seized three hundred sixteen merchant vessels, each valued at around £3,500—more than the colonials lost to Spanish privateering in the decade leading up to war. Back in England, tensions between the English and the new Spanish-French alliance over The War of Jenkins’ Ear and the troubled Austrian succession resulted in several years of conflict, known appropriately as The War of Austrian Succession, which formally ended in 1748.

The War of Jenkins’ Ear is often misunderstood, or worse, underestimated as a minor footnote in history, relegated to a passing in histories regarding the American colonies or British foreign policy. While much of the history that makes up this event is diplomatic, it is lively, full of excitement, and not to be, in the words of Jeremy Black, “condemned… as desiccated.” Rather, it can be seen as the result of two separate, yet connected by way of merchant commerce and Parliament, situations developing almost simultaneously in the English Colonies. The War of Jenkins’ Ear was the outgrowth of tensions with the Spanish in the contested Georgia territory, as well as those resulting from privateering in the West Indies. These tensions were seized upon by expansionists in England and used to force Robert Walpole to abandon a trade-first pacifistic policy in regard to the frequent conflicts of the time in both the Old and New World. It is doubtful that Juan de León Fandino would have imagined that his impromptu removal of Robert Jenkins’s ear in the West Indies would have resulted in a general war over the succession to the Austrian throne, but perhaps not, if he understood European diplomacy in the eighteenth century.
Footnotes

1 John Tate Lanning, The Diplomatic History of Georgia: A Study of the Epoch of Jenkins’ Ear, (Chapel Hill: The University of North Carolina Press, 1936), 174. Alan Taylor, a Pulitzer Prize winning author and not an average individual, in his book American Colonies devotes only a paragraph to The War of Jenkins’ Ear.

2 Lanning, 11.

3 Ibid, 10.

4 Ibid, 20. This claim was based on the sacking of St. Augustine by Sir Francis Drake, thereby temporarily claiming the territory for England, until the Spanish rebuilt.

5 Lanning, 34.


7 Lanning, 33.

8 Ibid, 69.

9 Lanning, 102.

10 Julie Anne Sweet, Negotiating for Georgia, British-Creek Relations in the Trustee Era 1733-1752, (Athens: The University of Georgia Press, 2005), 141.

11 Lanning, 136.

12 Ibid, 137.

13 Ibid, 140.


15 Hildner, 326.

16 How much of these activities the SSC knew of, or even sanctioned, is still debated by scholars.

17 J. K. Laughton, “Jenkins’s Ear” The English Historical Review, Vol. 4 No. 6 (October 1889): 742-743.

18 Hildner, 329

19 Ibid, 331.

20 Ibid, 334.

21 Jeremy Black, British Foreign Policy in the Age of Walpole, (Edinburgh: John Donald Publishers LTD, 1985), 111.


23 Ibid, 138.

24 Ibid, 176.

25 Lanning, 152. Believed to be a falsehood, a letter dated early 1731 (quoted above) confirms that Jenkins did in fact, loose his ear.

26 Lanning, 154.

27 Sweet, 141.

28 Ibid, 143.

29 Sweet, 150-151.


32 Harkness, 61.

33 Ibid, 89.

34 Ibid, 88. “As early as 1648 Thomas Gage called himself an “English-American.” In 1691 Cotton Mather had referred to himself deprecatingly as a “rude American,” and in 1701 the author of An Essay upon the Government of the English Plantation signed himself as “An American.”

35 Harkness, 76.

36 Ibid, 79.

37 Lanning, 188.

38 Black, v.
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Assessment of 1080 Use in New Zealand
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Abstract
This paper explores sodium monofluoroacetate, \( F-CH_2-OOO-Na \), or 1080 (as it is commonly known) - a hazardous toxin that is used extensively in New Zealand to control feral pests. 1080, labeled as “extremely hazardous” by the World Health Organization (WHO, 2004, p.16), has been banned in the United States by the EPA (except for use in poisoned collars against coyote attacks on livestock) (Weaver, 2003, p.48). Methods of administration in New Zealand include traps and aerial disbursement of poisoned bait. While ground traps are controlled so that only the desired animal is targeted, aerial drops to unmanaged sections of forest administers the poison indiscriminately. All animals are vulnerable to the poison, and this would include the non-target animals that this procedure is designed to protect. If a lethal dose is not primarily ingested, secondary poisoning can take place via ingestion of tainted flesh from a carcass of an animal killed by 1080. Chronic toxicity can occur when sub-lethal levels are ingested over time; this has been shown to lead to serious organ mutation (Weaver, 2006, 377). Aerial drops of poisoned bait directly contaminate waterways and watersheds. The Department of Conservation (DoC) and the Animal Health Board (AHB) contend that this poison and method of dispersal are both safe and necessary, stating “the benefits of using 1080 outweighed the adverse effects” (“The Reassessment,” 2007, p.22). The DoC also admits that research is ongoing and incomplete (2007, p. 26). Aerial administration of 1080 must be stopped immediately until concrete evidence can support the claims of human safety.

The introduction of mammalian predators and pests to New Zealand has resulted in an ecological nightmare. Stoats, possums, rabbits, cats and ferrets pose serious threats to the native flora and fauna, and many different methods of control have been used to try and manage the problem. 1080 is one method of control that is tremendously popular. This highly toxic poison is used in traps as well as aerial drops. The use of this poison is extremely controversial; while it is effective in controlling local populations of unwanted pests, it kills indiscriminately any animal that ingests a lethal dose. As over 3.2 tons of 1080 are distributed across New Zealand annually (Foronda, N., Fowles, J., Smith, N., Taylor, M., & Temple, T., 2006, p. 85), it is of the highest concern to affirm that it is safe. Unfortunately, this has not happened. The DoC claims that the “benefits outweigh the adverse effects”; however, many independent studies have shown that this might not be the case. Waterways have been shown to carry traces of 1080 (Weaver, 2003, p. 53); secondary poisoning of unintended target animals occurs frequently as scavengers feed on the carcasses of animals killed by 1080 (Lloyd & McQueen, 2000, p. 47); non-target animals, such as birds, domestic dogs and livestock, are frequent victims of 1080 (Fisher, 2007, p. 569), and sub-lethal doses have been shown to lead to chronic toxicity which in turn impacts systems and organs of non-target animals (Weaver, 2006, 377). Until further research is done to prove that 1080 is absolutely safe and will have no long-term effects in humans, aerial drops of this poison should be banned.

Invasive mammalian predators are known to cause harm to local animals, and in some cases, render them extinct. This is abundantly evident in the island nation
of New Zealand. Before human contact, animals in New Zealand evolved in isolation and without mammalian predators (Harada & Glasby, 2000, p. 80); as a result, many bird species became flightless and ground nesting (Pryde & Cocklin, 1998, p. 89). When humans arrived around 800 A.D., they found a land inhabited by ratites (large, flightless birds) as well as other smaller flightless birds. Humans brought rats and dogs with them, and over the next 800 years these three species decimated the bird population (Harada & Glasby, 2000, p. 85), extinguishing 34 bird species during this time (Veblen & Stewart, 1982, p. 374; Diamond & Veitch, 1981, p. 499). European colonization began in earnest after 1840, and with this came a new wave of biological invaders (Harada & Glasby, 2000, p. 79, Veblen & Stewart, 1982, p. 374). Feral populations of European domesticated animals (pigs, goats, sheep and cats) devastated native flora and fauna; Europeans also introduced several species of wild animal for sport and fur such as deer, rabbit and possum (Veblen & Stewart, 1982, p. 374). When the rabbit population grew beyond control, the stoat (also known as the short-tailed weasel or ermine) was introduced as a biological control. Unfortunately, the stoats found New Zealand’s flightless birds easier prey (Pryde & Cocklin, 1998, p. 89), and they are now “known to kill up to 60% of all North Island kiwi chicks and wreak havoc on other native bird populations, killing far more than they need to survive” (“Media Release,” 2001). As a result of these introductions, another 16 land bird species have become extinct in the last 200 years (Craig et al., 2000, p. 63). New Zealanders, wanting to stop the mass extinction of their native birds as well as negative impacts on agricultural production and native forests, began intense chemical warfare against invasive predators and grazers in the 1960s (“The Reassessment,” 2007, p.5). There are an estimated 55 million possums in New Zealand, eating an average of 7 million tons of vegetation annually (“The Reassessment,” 2007, p. 7). This is devastating for native forests and for those who inhabit them. They also feed on eggs and chicks of native birds, and are known carriers of bovine tuberculosis (Veblen & Stewart, 1982, p. 389). For these reasons, the Brush-tailed Possum is the main target of 1080. A popular method of application is aerial bait drops, and a portion of the 3.2 tons of 1080 is dispersed via this method. The DoC claims to distribute 1080 over 560,000 hectares annually, and 150,000 hectares of that number are managed aerially (“1080 Questions,” n.d., p. 2). The distribution of this much poison over such a large area begs the question of contamination of water and soil and how that might affect humans. There is conclusive research proving that at temperatures of 70°F, the rate of degradation was acceptable (no traces found after 141 hours). However, after the same amount of time in 52°F water, 30% of the poison remained (Weaver, 2003, p.53). This is significant because most mountain rivers in New Zealand have water temperatures well below 70°F, especially during winter when most aerial operations occur. The Environmental Risk Management Authority (ERMA) claims that there is no evidence that 1080 persists in water, but as for soil concerns, “acknowledged that there was little research available on the persistence of 1080…and recommended that further research be done in this area” (“The Reassessment,” 2007, p. 19). By their own admittance, 1080 may pose a public health risk due to persistence in soils. Considering the danger 1080 poses to all animals, especially mammals, the acknowledgement that there is little research and information as to the persistence and effects of 1080 available (and the lack of foresight to test 1080 levels in cooler waters) is unacceptable and a policy failure on the part of the New Zealand government.

In the Environmental Risk Management Authority’s 2007 reassessment of 1080, the
Committee claims that there is little to no evidence that 1080 harms lizards, bats, insects and frogs; they also claim that 1080’s use results in a positive effect on bird population numbers ("The Reassessment," 2007, p. 18). In their study regarding the impact on birds, Burr & Powlesland (1997) concluded that over 30 species of native birds are at risk and are vulnerable to 1080 poisoning (pp. 9-19). Several other bird species are listed as having unknown impacts on their numbers (1997, p. 19). Although 1080 is successful at temporarily controlling local pest populations, the reduction in their numbers put birds at further risk. Stoats and felines, which prey on possums, turn their attention to native birds after “successful” 1080 drops have resulted in drops in possum numbers (Burr & Powelsland, 1997, p. 10). For species other than birds such as bats, lizards, frogs and other invertebrates, techniques and procedures for monitoring effects of 1080 are described as inadequate, biased, in need of improvement, insufficient, invalidated (Burr & Powlesland, 1997, pp. 6-9), and difficult to assess (Lloyd & Mc Queen, 2002, p. 58). In fact, Burr & Powlesland’s results published for and by the DoC state that

The lack of standard, validated methods for monitoring wildlife species has hindered assessment of the impacts of 1080-poisoning for possum control on non-target populations. Initial measurements of bird populations using 5-minute counts...found no evidence of any population impacts from 1080-poisoning. However, 5-minute counts have not been adequately validated...There is an urgent need for research to validate methods for monitoring population numbers of all non-target species...Research is needed urgently on determining the long-term impacts (whether costs or benefits) of 1080-poisoning for possum control on wildlife (1997, p. 27).

This paper was published nearly 40 years after 1080 was approved for use as a pest control in New Zealand. It is highly irresponsible for ERMA and the DoC to claim that there is no evidence of impact by 1080 on non-target populations when either the evidence is clear it has, or they have not researched the issues thoroughly and carefully enough to make such claims.

The World Health Organization declares that 1080 is of “very high mammalian toxicity,” and is “very toxic to birds, domestic animals and wildlife. High risk of secondary poisoning to carnivorous and omnivorous species from eating poisoned carcasses” ("Data Sheets,” 1975, pp. 2, 3). Secondary poisoning occurs when an animal ingests the flesh of another poisoned animal's carcass. This is quite common; after aerial distribution of 1080, no retrieval efforts for poisoned carcasses are made (the reason given for aerial distribution is that the areas targeted are too remote or too rugged to be “cost-effective” to use other application options) (“1080 Questions,” n.d., p.2). Stoats often feast on the remains of possums and are killed as well. In this instance this is seen as beneficial, as stoats negatively impact native bird populations. However, as 1080 is highly toxic to all animals, this poses a serious problem for dogs and other scavengers. Lloyd & McQueen note that “secondary poisoning of carnivores and scavengers is well documented” (2000, p. 47). In their 2000 study of secondary 1080 poisoning of insectivores, Lloyd & McQueen raise concerns about secondary poisoning of insectivores such as birds and bats (2000, p. 51). There have been many instances of dog fatalities from secondary poisoning, and ERMA admits this ("The Reassessment,” 2007, p. 22). Dogs have been found to be hypersensitive to 1080 and display symptoms such as “rapid onset of anxiety, nausea and vomiting, followed by fits of wild barking and frenzied running, repeated urination, defecation, convulsions and paddling and increasing seizures” (Fisher, 2007, p. 569). There is no antidote for 1080 (Eason, 2002, p.
As part of ERMA’s reassessment of 1080, new guidelines regarding dog safety are:

- Signs marking areas where 1080 is used must contain a statement warning the public, including dog owners, about the danger from possum carcasses. This must be readable from a distance of 10 meters.
- Signs must remain in place for six months after a 1080 operation or until the earlier of either the retrieval of the bait or demonstration that the bait and carcasses are no longer toxic (2007, p. 24).

Despite assurances by the DoC that 1080 has been demonstrated as safe (“1080 Questions,” n.d., p. 4), these guidelines make a powerful counterclaim.

So what happens when a lethal dose of 1080 is ingested? Acute toxicity can be described as the result of a lethal dose of poison. This is the intended effect of 1080 on the undesirable pests such as the possum. At the onset of poisoning, nausea and vomiting occur followed by tremors and seizures, paralysis, then coma and death. M.W. Fisher points out that this process takes an average of 9.5 hours for possums, for most of which time they appear to be in distress and experiencing pain or discomfort (Fisher, 2007, p. 567). Should we care that animals regarded as pests suffer for long periods of time due to acute toxicity? Acute toxicity will occur to any animal that ingests enough of the poison, which means they will suffer the same excruciating fate as the target animals. 1080 is responsible for the deaths of not only target animals such as the possum and stoat, and non-target animals such as dogs; it has also claimed the lives of:

deer, goats, pigs, cats, sheep, cattle, horses, poultry, harrier hawk, weka, pukeko, black-backed gull, kereru, kaka, kea, morepork, rifleman, pipit, whitehead, grey warbler, fantail, tomtit, robin, silvereye, bellbird, tui, kokako, quail, chukor, skylark, hedge sparrow, blackbird, thrush, yellowhammer, chaffinch, greenfinch, redpoll, house sparrow and magpie (Fisher, 2007, p. 569).

Some of the animals at risk are livestock animals, such as cattle, sheep and horses, while others are hunted for sport and food such as the red deer and feral pigs. These animals will inadvertently consume poisoned baits while grazing and browsing. Also, Meenken & Booth (1997) concluded that there was enough 1080 remaining in a possum carcass to be a serious threat to dogs after 75 days of poisoning (as cited in Weaver, 2003, p. 50). However, when livestock are known or suspected to have ingested a sub-lethal dose of 1080, there is a only a recommended 5-day minimum holding period before slaughter, and if there have been observed deaths due to 1080, longer holding periods are recommended (Weaver, 2003, p. 51). Studies on 1080 meat contamination of sheep and goats were done in 1994 by Eason et al., and tests proved that “poison residues were measured in blood, muscle, kidney, and the liver” (as cited in Weaver, 2003, p. 51). This means possible exposure to humans who consume these products. Red deer and feral pigs are hunted for food in some parts of New Zealand, and there is concern about residual levels of 1080 in the meat, organs, and blood. Pigs, which are known omnivorous scavengers, would be especially at risk for exposure to 1080 from eating carcasses of dead animals found in the forest. Sub-lethal doses of 1080, when consumed by deer and pigs, could make them slower and easier prey – an easy target for the hunter. But what happens to humans who could be exposed to low-levels of 1080 for long periods of time?

Chronic toxicity can be described as prolonged exposure to sub-lethal doses of a toxin. Most research conducted by the DoC, the AHB and ERMA focus on acute toxicity, or on what levels are at least near-lethal. There is research that has been done on chronic toxicity, and it is alarming. Sean Weaver, PhD
reveals that

There are a variety of potential hazards associated with any partial persistence of 1080 including endocrine disruption, which can happen at very low concentrations, acute and chronic hazards to dogs, invertebrates, vertebrate wildlife, fish and other aquatic wildlife, aquatic and terrestrial food webs, and human drinking water supplies – particularly subterranean water flows” (2003, p. 53).

Others found testicular damage, heart problems, and fetal damage in rats after long-term, low-level contact with 1080, and these problems did not correct themselves after exposure to 1080 was stopped (Eason & Turk, 2002, pp. 439, 443, 445; Weaver, 2006, p. 377). Day, Matthews and Waas concluded that “the possibility remains that there may be adverse effects on species that have not yet been assessed” (2003, p. 309). Although there is not a scientific consensus in New Zealand or Australia regarding public health effects, the Environmental Protection Agency in the U.S. has classified 1080 as “a male reproductive toxin” (Weaver, 2003, p. 54). Foronda et al. state that the current NOAEL (no-observed-adverse-effect-level) does not mean that there is no risk, and that after an exhaustive literature review regarding the risk of 1080 on human health, the study found that “the critical effects arising from 1080 exposure were testicular/epididymis, myocardial toxicity and teratogenicity” (2006, pp. 84, 87-88). Evidence here clearly proves that sub-lethal doses of 1080, consumed over time, can result in extremely negative consequences for animals and their systems and organ, and the poison can accumulate to eventually lethal levels (Lloyd & McQueen, 2000, p. 52).

Little is truly known regarding the long-ranging effects of 1080 on non-target species and on the environment. Regardless, tons of this poison are indiscriminately dropped over hundreds of thousands of acres of forest in New Zealand annually. Waters and soils are contaminated, and though the DoC and ERMA assure that concentrations of 1080 are quickly diluted or biodegraded (“1080 Questions,” n.d., p. 3; “The Reassessment,” p. 19), they are also quick to admit that more testing needs to be done. Livestock, pets, endangered birds, as well as other animals, are accidentally killed or sickened with every air drop of 1080. Residual poison in the organs and tissues of animals that could potentially be consumed by humans, especially in light of new evidence showing that the poison can accumulate and cause permanent damage to tissues and organs, should be enough to ban the use of 1080 completely. While the poison works at temporarily controlling pests, their populations always rebound. The obvious choice is for New Zealand to ban the use of this poison and try to come up with a better solution, one that is more suited to their “clean, green” reputation. A perpetuity that will always rely on poison as a control is dangerous, careless, and futile.
References


Reconceptualizing the Wilderness
Native American Landscapes and Euro-American Control in America's National Parks

Holly Miller

The history of national parks in the United States can be traced back to the initial westward expansion by Euro-American settlers. These men and women fanned across the continent in search of land and resources that they could claim as their own. Based on their own ideals the landscapes, though alien, were full of possibilities. Euro-Americans saw the future as farms and houses, or even towns with stores and churches. The United States government described lands in the West as “public domain” despite the Native peoples living on the land. By the late 1800s when the first national park, Yellowstone, was established, the U.S. government defined the land designated for the park as a wilderness area that should be preserved, and as unsuitable for settlement. With no great manmade monuments to nationhood like Buckingham Palace or the Louvre, the United States would use the natural wonders of Yellowstone to symbolize their greatness and power. But Native Americans did not see the same things when they looked at the lands of Yellowstone; they saw a homeland - a place that possessed a long history and connectedness to Native American people. These landscapes were not wildernesses to be gazed upon and ‘preserved’ but the places where every aspect of life, from hunting to praying, were lived. Native Americans and Euro-Americans conceptualized the land in fundamentally different ways. In many cases, these conceptions of place contributed to the dispossession of Native Americans from their homelands in order to establish national parks, monuments, and protected areas. Euro-Americans had the power to control land use according to their own values and ideas, and they often failed to allow or even acknowledge traditional Native American uses of land. Native Americans lacked the power to control how parks were managed even though they had been living in those places for millennia. America’s national parks illustrate how power and contrasting conceptions of place are expressed in both historical and modern conflicts between Native Americans and Euro-Americans. While progress has been made in adapting federal policy to accommodate Native land use, misunderstandings and contention in national parks persist.

Long before the establishment of any American national parks, their ideological foundation was laid out across the continent. Ideology is an integral part of culture, and it is important to make it clear that at a societal level, many of the tropes and ideologies of American colonial culture were based on a belief in Euro-American superiority. Settlers, on individual levels, had grown up in a world that taught them how to think about Native Americans and the American landscape. The ‘logic’ of their beliefs was reified by their churches, their government, their families, friends, and neighbors. This is not to say that these beliefs are justified, but that the construction of their culture determined, in large part, how individuals thought and acted. When settlers encountered Native Americans they often approached them with attitudes of superiority and fear. Stereotypes and misinformation produced a vision of the
Native American in the minds of the settlers; they were seen, sometimes contradictorily, as backward savages, as a vanishing race, as drunks, as murderers, as witches and heathens, and as preventing Euro-Americans’ pursuit of “manifest destiny.” This ideology, in which Euro-Americans believed in their divine right to develop and settle America from the Atlantic to the Pacific Ocean, was partly based on the conception of a harsh and wild landscape that must be tamed and controlled. Frederick Turner’s immensely influential 1893 essay, The Significance of the Frontier in American History, shaped how Americans thought about their own history and about western landscapes. He wrote that “the existence of an area of free land, its continuous recession, and the advance of American settlement westward, explains American development.” Turner’s writing supported the notion of manifest destiny and helped explain why western colonization of Indian lands was justified and necessary. Stereotypes about Native Americans worked to separate them from these landscapes, as Alvin M. Josephy writes: “[T]hese comfortable images defamed and dehumanized Indians, reducing them in the non-Indians’ mind to something faceless, akin to trees and wild animals that the builders of the American nation felt compelled to clear from the land.” Euro-Americans used a number of mechanisms to dispossess Natives from their lands, including the sale of lands under pressure and economic hardship, the signing of land treaties and their subsequent abrogation, outright theft of lands, reduction of Native American populations through disease, aggressive assimilation policies, and the relocation of Native Americans to reservations.

While the landscapes of America came to symbolize the conquering of a harsh wilderness by an industrial people for Euro-Americans, this same landscape now symbolized a bitter history of dispossession and marginalization for Native Americans — a landscape that for them had always had a historical and spiritual significance. The Native American worldview could not separate the land from the people; they saw lands that became national parks as places that had been and always would be a part of their collective identity. Gordon writes, “In Indian belief, the place where an event occurred, rather than the event itself, assumes special spiritual significance. As a result, Indian worship focuses not so much on revelatory events, but spiritual renewal through ceremonial and individual relationships with holy places.” Euro-Americans, whose religious beliefs were typically Christian and whose holy lands were on a different continent and not determinate of their ability to worship, could not understand the Native American relationship to landscape features. Euro-Americans sought to define these landscapes according to their own sensibilities. The idea of national parks was a way to take dramatic landscapes unsuited to farming and turn them into monuments to the young but powerful American nation. Burnham writes, “Conceived at a time when the frontier was being claimed by settlers and ranchers, parks were established as a permanent way to preserve the grandeur of the American experience.” Of course, this concept of the “grandeur of the American experience” was not designed to preserve the reality of these landscapes as places where Native Americans lived, but as simulacrum of an idealistic fantasy. It was this fantasy that guided the United States government in deciding where parks should be, how they should be managed, and how they should be used. The Native Americans, who lived in lands that became parks or used park lands for hunting and gathering, were powerless to control the fates of these landscapes. Yellowstone National Park, Devil’s Tower National Monument, and Death Valley National Park are three such places that exemplify how the seemingly innocuous concept of a park worked to disrupt Native Americans’ ability to live in their ancestral homelands, seek resources, and worship in
their holy places. Today Native Americans continue to struggle with the United States for their rights to these landscapes.

National parks all over the world can often source their founding philosophies to what is called the “Yellowstone model for ‘the preservation of “wilderness” areas of outstanding natural beauty and/or scientific interest.’”8 When Yellowstone National Park was founded, the advent of modern transport and the industrialization and urbanization of America framed the lifestyles of Euro-Americans in that they now had disposable income, access to time-space reducing train travel, and a culture that cultivated a very distinct separation between work and leisure.9 People could easily travel by train to visit the newly-defined monuments to American greatness. In 1872 Yellowstone was “dedicated and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people”10 by the legislature. However, Native Americans like the Nez Perce and the Shoshone were removed or chased through that land in order to create the ‘pleasuring ground’ for Euro-American tourists. Euro-Americans saw the landscape as a pristine wilderness, and Native Americans were conceived as a threat to that image and to the safety of tourists who wanted to visit the park. In 1877, the U.S. Army hunted the Nez Perce through Yellowstone because they refused to settle on a nearby reservation, and in 1879 the Army removed the Shoshone from the park area because they were seen as a threat to park development. In 1880 the park superintendent “negotiated a banishment of Native Americans from most of Yellowstone proper.”11 For over 8,000 years Native Americans had been hunting, gathering, worshiping, and mining in the Yellowstone area before the United States removed them from this ‘wilderness.’ Ironically, the buffalo that had been hunted to near extinction by Euro-Americans as a means of clearing the plains for the railroad and to rid the area of buffalo-hunting Native Americans became subjects for conservation in the park. Buffalo were “husbanded in the park as a symbol of wilderness” while traditional Native American buffalo hunters were demonized by people who adhered to the new “preservationist ethic” sweeping through America.12

The case of Yellowstone illustrates the foundational and fundamental differences in how Euro-Americans and Native Americans conceptualize landscapes. To Native Americans, Yellowstone was a place where they could “fulfill their way of life as a part of the land on a level of coexistence which is not separate from these areas.”13 The land, animals, and people were all part of a greater whole, and the Native American worldview did not have a conception of ‘tourism’ or ‘wilderness.’ The Euro-American worldview was obviously quite different, and they had the means to control how the landscape of Yellowstone was used. The myth of the pristine landscape was powerful in white culture. Euro-Americans sought out landscapes that they could define as such even when they had to forcefully eject Native Americans. ‘Wilderness’ was seen as a place separate from humans—where people could go to escape from real life for recreation and then return to their urban homes. The integral whole of the Native American world—the people, places, and animals—were separate in the minds of Euro-Americans, and thus were separated spatially when particular areas were designated as national parkland.

Through the establishment of many of America’s national parks, Native American uses and meanings played little part in how boundaries were set and areas were managed. The ideologies of Euro-American society provided the philosophies that national parks were built upon, and even today ninety percent of park visitors are of European descent even though Euro-Americans account for less than seventy percent of the total U.S. population.14 For over one hundred years, conflict between Euro-Americans and Native Americans in parks has been significant, especially in places where Native Americans have a particularly intense spiritual
connection to a place that Euro-Americans view as a source of recreation. Devils Tower National Monument is one such site that has been the subject of recent conflict. The 860-foot tower of rock is known to Lakota people as Mato Tipila, or Bear Lodge, but is known by a variety of other names by more than twenty Plains Indian cultures that consider it a sacred site. Native Americans come to Bear Lodge to worship, conduct vision quests, and pray. On the other hand, Euro-Americans usually come to Devils Tower for recreational reasons. Climbing in particular is very popular and is considered by many Native Americans to be a desecration of the tower. Native Americans often cite climbing the tower to be like someone climbing a cathedral for sport. During the month of June when the Sun Dance brings many Native Americans to Bear Lodge to worship, tension and conflict between climbers and worshippers is especially marked. Climbers have been known to take pictures of Native Americans worshipping, steal prayer bundles, and disrupt ceremonies. In 1995, the National Park Service instituted a policy asking climbers to participate in a voluntary ban on climbing during the month of June. Some climbers and climbing guide outfits took the NPS to court, claiming the voluntary ban threatened their economic well-being and violated the First Amendment, which declares that “Congress shall make no law . . . respecting an establishment of religion.” Climbers adopted the language of Native Americans’ arguments, claiming that climbing Devils Tower offered them similar religious experiences, and that they should have equal rights to the park regardless of how Native Americans viewed their activities. The case was eventually turned out by the Supreme Court, and the voluntary ban stands today. Climbing during June is significantly reduced, although the number of people adhering to the ban has been waning. In 2004, the number of climbers in June was about 69 percent of the pre-ban rate.

While this case illustrates how conflict can arise when different cultures both see and use the same place differently, it also calls attention to how national parks thwart Native Americans’ ability to use and manage their spiritual places as they see fit. While the National Park Service (NPS) acknowledges the cultural significance of the site for Native Americans, the ban is voluntary because the park is on ‘public land’ managed by the federal government. The park supposedly belongs to all Americans and is based on the constitutional ideals of equal-access, but in practice it ignores the reality that the land belonged to and was used by Native Americans long before a white man set foot in Wyoming. We must ask - is it truly every American’s right to be present at Bear Lodge during religious ceremonies? Most Euro-Americans have trouble understanding the fact that Bear Lodge for Native Americans can be roughly compared to a Christian church or Jewish temple. Churches and temples are generally private buildings that allow their congregations to worship freely, discreetly, and without tourists disrupting ceremonies. The equal-access ideal of national parks manipulates the responsibility that the United States has to Native American cultures. Devils Tower National Monument defines Native Americans’ rights as equal to everyone else’s. It acknowledges their right to practice their religion freely, but it cannot guarantee their privacy or that their sacred places not be desecrated by climbers. This is not to argue that climbers and Americans do not have a personal connection to this place, for they obviously do. It is asserting that Native Americans’ long cultural history at this place, combined with the fact that Bear Lodge never truly was the American government’s land to begin with, make federal management of this place a farce. Until autonomy is in Native American hands, the federal government will have control over Native Americans’ ability to worship at Bear Lodge.

The NPS is highly resistant to giving up their authority over park lands, but there are a few cases in which the federal government returned park lands to Native Americans or
now shares management with tribes. Death Valley National Park is one such place. The Timbisha Shoshone now live on three hundred acres of land in trust within park boundaries and co-manage a portion of the park with the National Park Service. It is the first reservation to be established within a national park. However, the park service only came to the negotiating table after the Timbisha Shoshone fought for years to get them there. Finally, the NPS was forced by law to negotiate a Native American land base within park boundaries in 1994. The Timbisha Shoshone’s marginalization by the NPS on their ancestral homelands started as soon as the area became designated a national monument by Franklin D. Roosevelt. The federal government banned hunting even though Native Americans relied on bighorn sheep for food; fires were prohibited outside of designated areas; water access was restricted; the establishment of summer camps for gathering pinyon nuts was prohibited, and the public was permitted to visit the Shoshone’s sacred areas. In the 1930s, the government relocated the Shoshone’s entire village to another location within the park because it conflicted with what tourists were expecting to see. It is remarkable that given the attitude of the park service and the forced relocation of Native Americans from other national parks that the Timbisha Shoshone were not forcibly ejected from their lands in the first place. But they did remain, and their struggle to regain control over their lands has set an important precedent that can be turned to in the future by other tribes seeking to regain control of their ancestral lands.

Poirier and Ostergren wrote, “To some, the very idea of a ‘wilderness’ without the indigenous peoples associated with that landscape is dehumanizing that population.” This distinctly Euro-American conception of place has played a major role in the dispossession of Native Americans from their homelands. Additionally, many Americans believe in their right to equal, unencumbered access to Native Americans’ sacred places, citing the United States Constitution. These conflicts in how Native Americans and Euro-Americans think about and use place make mutual understanding difficult. The tourism industry and the myth of a pristine wilderness continue to determine how most national parks are managed, and Native Americans often lack the power to exact change. However, progress toward more Indigenous management of parks is being made, as the case of the Timbisha Shoshone illustrates. Co-management is probably the best-case scenario (at least in the foreseeable future) for many of America’s national parks even though Native Americans’ claims are more legitimate. Poirier and Ostergren argue that “[j]oint management is not simply a conservation agreement, it is part of the wider issue of social justice, community development, and the preservation of cultural identity. . .” Native Americans did not vanish as the United States expected them to, and they continue to see their landscapes as part of the whole that is the Native American identity. The reintroduction of people into Euro-Americans’ conceptualizations of wilderness landscapes is an important step toward understanding the Native American worldview, and thus understanding why co-management of national parks is essential to achieving an ethically just co-existence of the United States and Native American nations.
Footnotes


17 Ibid, 1.

18 Ibid, 2.


Ibid, 351.

Bibliography


Dane I. duPont

Abstract

For ten years the Hawaiʻi Revised Statute, Section §329 has provided Hawaiʻi’s medical community with an essential option for treating patients. Thousands of medical marijuana patients in Hawaiʻi are treated for various conditions under the outline that this section of the Hawaiʻi Revised Statue provides. However, certain parts of the statute (§329) have yet to be implemented, and other parts are inadequate, as explained in the following pages.

The arguments put forth in this report shall set out to accomplish the following: a) to reveal common shortcomings in the current law and its implementation; b) to identify and reproduce the underlying fallacies and problems that lead to the shortcomings; and c) to demonstrate a need for revision of Hawaiʻi Revised Statute, Section §329.

Acknowledgments: The Author wishes to thank the medical marijuana patients that commented and provided input, but who did not feel comfortable having their personal information disclosed for reference. Special thanks to Njugu Gachugu for helping with project.

Inadequacies contained within the Hawaiʻi Revised Statute, Section §329 and the definition of 'adequate supply':

In Part XI of HRS-§329 entitled "Medical Use of Marijuana," the definition for "adequate supply" (HRS-§329-121) contains examples of three logical inadequacies. The definition is established as follows: "'Adequate supply' means an amount of marijuana... that is not more than is reasonably necessary to assure the uninterrupted availability of marijuana... provided that an 'adequate supply' shall not exceed three mature marijuana plants, four immature marijuana plants, and one ounce of usable marijuana per each mature plant". In focusing on the last element in the definition, we observe that the phrase 'Usable marijuana' appears, which is defined as "the dried leaves and flowers of the plant Cannabis family 'Moraceae', and any mixture [or] preparation thereof, that are appropriate for the medical use of marijuana,” and is defined even further such that “'Usable marijuana' does not include the seeds, stalks, and roots of the plant" (HRS-§329-121, 2000). These two definitions establish that a patient shall not have more than three ounces of medical marijuana, or a substance produced with marijuana for medical purposes, in his/
her possession at any given point in time. This definition is important for consideration because the definition of 'adequate supply' leads to inevitable ambiguity of terminology as well as unforgivable contradictions. The inadequacies of the definition of 'adequate supply' are presented as follows:

**First inadequacy in HRS-§329-121 -- The definition of 'adequate supply' collapses upon itself when Nature is applied:**

The current law emphasizes the allowable numbers of mature plants (three plants) and immature plants (four plants) for patients. However, marijuana crops do not abide by this stipulation in HRS-§329 since their maturity, outside of a controlled environment, is little influenced by the caretaker. Marijuana plants left to the influence of the environment will adapt to that environment, not to the patient's legally defined obligation.

Many influences determine the maturation of a marijuana plant. These influences include, but are not limited to, the moon cycles, the amount of light available to the plants, the season in which the marijuana plant is growing, the strain of marijuana, etc. These influences, which are common for medical marijuana growers, determine the date upon which a plant “matures”. Marijuana crops often will mature against their grower's intent, and will require the grower to harvest all plants at once, in effect being a forced illegal act. Thus, patients can have every intention of keeping to this section of HRS-§329, yet due to the requirements on plant numbers and plant maturity, often find themselves having to sacrifice medicine in order to abide by the law. This dilemma constitutes a "Conflict with other laws" in which case, "this chapter [The Patients' Bill of Rights] shall prevail to the extent that this chapter offers greater protection or rights to the enrollee" (Hawai‘i Revised Statute, Section §432E-2, 2000). It can be established that HRS-§329-121 is inadequate. It also means that a "[more] appropriate delivery or level of service" must replace the current operation, given that the Patient's Bill of Rights recommends that a "health intervention" be established for the delivery system of medical products (Hawai‘i Revised Statute, Section §432E-1.4.b, 2000). We therefore have sufficient grounds to enact a "health intervention" on the production and delivery system of medical marijuana for patients.

**Second inadequacy in HRS-§329-121 – Ambiguities within the definition of 'adequate supply' form conflicting interpretations/conclusions:**

As mentioned earlier, the definition of 'adequate supply' found in HRS-§329-121 ends with "one ounce of usable marijuana per each mature plant". The definition of 'adequate supply' is interpreted literally to mean that a patient may have no more than three ounces in their personal possession at any given time. This interpretation is presented in a more refined way in the Department of Public Safety's Chapter 23-202. It is also enforced through the Narcotics Enforcement Division's Patient information for the Authorized Medical Use of Marijuana, as well as the Hawai‘i Police Department's Rules and Regulations Governing Investigations Involving the Medical and Religious use of Marijuana.

A second interpretation states that each marijuana plant may contain no more than one ounce of harvestable, as opposed to usable, marijuana on it when in its mature state. This interpretation, while not stated in HRS-§329, is directly implied by the first interpretation. HRS-§329 defines the amount of mature plants in its definition of 'adequate supply', stipulating that a patient "shall not exceed three mature marijuana plants". If a medical marijuana patient was forced to harvest his/her three permitted mature marijuana plants, that patient would be forced to discard all marijuana produced
in excess of one ounce per plant harvested. This scenario is very common for medical marijuana patients who do not have control over their environment and whose medical marijuana supplies grow at the discretion of nature. These patients, when faced with plants maturing beyond their legal intent, have to decide to either abide by the law and discard all harvested marijuana in excess of three ounces, or stockpile their harvest to ensure continuous, 'uninterrupted availability of marijuana,' as included in the definition of 'adequate supply' (HRS-§329-121, 2000). These conflicting meanings and interpretations found in the definition of 'adequate supply' form difficulties for patients when determining how to prioritize their intent to abide by the law, and their right to a sufficient supply of medical marijuana as defined by the law.

Third inadequacy in HRS-§329-121 – Definitions of 'mature' and 'immature' marijuana plants are inadequate and are not readily available:

The nomenclature of 'mature marijuana plants' and 'immature marijuana plants' remains void in the definition of 'adequate supply' in HRS-§329, but is established in Adoption of Chapter 23-202 Hawai‘i Administered Rules under the definitions of 'mature marijuana plant' and 'immature marijuana plant'. The definitions are stated as follows: a) a 'mature marijuana plant' is "a marijuana plant, whether male or female, that has flowered and which has buds that are readily observed by unaided visual examination"; and b) an 'immature marijuana plant' is "defined to mean a marijuana plant, whether male or female, that has not yet flowered and which does not yet have buds that are readily observed by unaided visual examination" (Department of Public Safety, 2000).

The definition of an 'immature marijuana plant' includes seedlings under its definition and counts them as an 'immature marijuana plant'. This inclusion demonstrates an incredible disconnect between the current lettering of the law and the reality of growing and cultivating marijuana for patients. Under this definition, a six-foot marijuana plant that “does not yet have buds that are readily observed” (a characteristic of a plant type commonly referred to as sativa), and a two week old seedling, are both counted as an 'immature marijuana plant'. To the grower however, in this case the medical marijuana patient, the difference is easily identifiable: the first plant, a six-foot plant that has not shown signs of budding, can have its sex determined by this point in its growth cycle (in most cases). The second plant, a two week old seedling, cannot have its sex determined, and will potentially have to be culled (killed) later if its sex is determined to be male. For the patient, determining the sex of medical marijuana plants as early as possible is of the utmost importance, as only female marijuana plants produce 'usable marijuana.' Therefore, males are generally killed when their sex is determined. In the case concerning the gender of a marijuana plant, probability states that a fifty percent chance between two different outcomes exists. When applied four times, once for each immature marijuana plant allowed, the most likely result would prove to be an even distribution of the two possibilities. Thus, most likely, two plants will be determined to be female, and two plants will be determined to be male. The females will be allowed to continue in their growth cycle and become what is referred to as a 'mature marijuana plant'. Males will be culled in order to make room for females that will produce their source of medication. However, the definition of an 'immature marijuana plant' does not address the issue of seedlings that medical marijuana patients and caregivers commonly negotiate. Patients and their caregivers are forced against an unattainable expectation held by the state: to adhere to the law by discarding any medical marijuana supplies in excess of three ounces, while being able “to assure the uninterrupted availability of marijuana”. It is therefore recommended that the definitions of a
“mature marijuana plant” and of an “immature marijuana plant” be revised to ensure that the "most appropriate delivery or level of service" of medical marijuana is available in our state (HRS-§432E-1.4.b, 2000).

**Hawai’i Revised Statute-§329 and the classification of marijuana as a 'Schedule I' substance.**

The Hawai’i Revised Statute, Section §329 has undergone several minor revisions since its implementation that were made by the administrator of the Narcotics Enforcement Division of the Department of Public Safety. However, the major efforts by bills, such as Senate Bill number 905 S.D.1 and House Bill number 1191, that aim to introduce some of the necessary revisions to HRS-§329 have not yet been passed by the State of Hawai’i. To expand upon necessary revisions required for HRS-§329, marijuana is classified as a 'Schedule I' controlled substance: “A substance shall be placed in 'Schedule I' if it has the highest degree of danger or probable danger”. (HRS-§329-14, 2000) The meaning of ‘Schedule I’ is further refined in the Controlled Substances Act section entitled Drug Abuse Prevention and Control which characterizes a ‘Schedule I’ substance as:

“(A) The drug or other substance has a high potential for abuse.
(B) The drug or other substance has no currently accepted medical use in treatment in the United States.
(C) There is a lack of accepted safety for use of the drug or other substance under medical supervision.” (21 USC Chapter 13 Sec.812, 2010)

Considering the criteria provided by the Controlled Substance Act of a 'Schedule I' substance, we can set out to determine just how well marijuana fits into this category by comparing marijuana to each criterion individually:

a) Marijuana 'has a high potential for abuse': Advocates of this notion, such as the Drug Enforcement Agency website, state quite plainly that “Marijuana is an addictive drug…”, citing Herbert D. Kleber and Mitchell S. Rosenthal’s article in Foreign Affairs magazine. Mr. Kleber and Mr. Rosenthal, however, do not say that marijuana is generally addictive in their article:

“Moreover, epidemiological studies reveal a significant level of marijuana addiction. Among all users, including casual ones, 9 percent become dependent…. (Kleber, 1998).”

So nine percent of the people that use marijuana will develop some sort of dependency on the plant. Assuming that Mr. Kleber and Mr. Rosenthal are correct in their statistics, a comparison between marijuana and other ‘Schedule I’ substances should not reveal any surprising discrepancies. The most reputable study that currently exists on the topic was published in The Lancet (2007) by Neuropsychopharmacologist, Dr. David Nutt and Dr. Leslie King. In the study, marijuana and nineteen other drugs are compared to one another for three different attributes: ‘Physical harm’, 'Dependence', and 'Social harm'. The resulting figures of the comparisons made in the study are in the below table:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Physical</th>
<th>Dependence</th>
<th>Social</th>
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</thead>
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<td>1.3</td>
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</tr>
<tr>
<td>Heroin</td>
<td>1.6</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Crack</td>
<td>1.6</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Methanol</td>
<td>1.6</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Cocaine</td>
<td>1.6</td>
<td>1.3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Note. The above table has been edited to exclude substances that had a lower average mean score for the three categories than cannabis. This table is taken from The Lancet, Volume 369, Issue 9566, Pages 1047 - 1053, 24 March 2007. 'Table 3', Retrieved from an online archive.

According to the analysis and scoring by Dr. Nutt and Dr. King, marijuana is the eleventh most addictive substance out of the
twenty substances that were involved in the study. Also, marijuana placed tenth under the 'Social harm' attribute (2007). The substances that placed higher under both the attributes of 'Addictiveness' and 'Social harm' in ascending order are as follows: heroin, 'Schedule I' (HRS-§329-14.c.11); cocaine, 'Schedule I' (HRS-§329-14); barbiturates, classified as amobarbital, 'Schedule II' (HRS-§329-16.d.1); methadone, 'Schedule II' (HRS-§329-14.c.15); alcohol, an un-classified substance in HRS-§329, but which I will classify as a 'Schedule VI' substance for the sake of this comparison; ketamine, 'Schedule III' (HRS-§329-18.c.6); benzodiazepine, classified as alprazolam, 'Schedule IV' (HRS-§329-20.b.1); and finally, amphetamine, 'Schedule II' (HRS-§329-14.e.1, 2000). Each of the above eight substances placed higher in 'Addictiveness' and 'Social harm' than Marijuana (Nutt, D., King, I.A., Saulsbury, M., & Blackmore, C., 2007, table 3). However, the average of the Schedules (I,II,III,IV,V,VI*), when sampled from the substances more addictive and harmful to society than marijuana, yield a value of roughly three (2.75). The study makes it clear that marijuana should be reclassified as a 'Schedule III' substance in HRS-§329 based on its 'Addictiveness' and 'Social harm'. (Nutt, D., King, I.A., Saulsbury, M., & Blackmore, C., 2007, table 3).

b) Marijuana 'has no currently accepted medical use in treatment in the United States.': Despite various government funded websites, this notion is no longer accepted within the scientific community. The National Institutes of Health, and other prominent health care organizations, report that use of marijuana can treat the following: 'Analgesia', 'Neurological and Movement Disorders', 'Nausea and Vomiting Associated With Cancer Chemotherapy', 'Glaucoma', and 'Appetite Stimulation/Cachexia' (Beaver, W., Buring, J., Goldstein, A., et al., 1998).

c) Marijuana currently has a 'lack of accepted safety for use of the drug or other substance under medical supervision': the Drug Enforcement Agency has made an agreeable point on this, that it is not a problem that stems from the potential dangers of marijuana itself. Rather, it stems from a lack of proper oversight. 'Clinics', with proper governmental oversight and regulation would serve as a potential remedy to this problem.

Conclusion on the classification of marijuana as a 'Schedule I' substance

After checking marijuana against the criteria for a 'Schedule I' substance, marijuana fails to meet the requirements for membership in that category. Marijuana would be more reasonably classified under a different schedule, such as 'Schedule III'. It is therefore recommended that Hawai‘i’s leadership take the initiative to thoroughly review current scientific knowledge and evidence about marijuana in order to more accurately and honestly classify it.

Areas of the Hawai‘i Revised Statute-§329 that have yet to be implemented or remain insufficient:

In Part III of HRS-§329, entitled "Regulation of Manufacture, Distribution, Prescription, and Dispensing of Controlled Substances", 'clinics' and 'principal physicians' are defined, but have yet to be implemented in practice. A "clinic" is defined by HRS-§329 as "an out-patient medical facility owned and operated by a legal entity that employs individual practitioners for the treatment of patients" (HRS-§329-31.5, 2000). A "principal physician" is defined in the same section as follows: "the practitioner in a clinic whose signature appears on the clinic's State of Hawai‘i and Drug Enforcement Administration registrations, and who is responsible for the proper maintenance, storage, and record keeping of the controlled substances ordered and centrally stocked in the clinic" (HRS-§329-31.5, 2000).

Overview of problems in HRS-§329-31.5.1 – The unimplemented aspects and problems associated:
While HRS-§329-31.5.1 avoids the kinds of content errors affecting other parts of the document, its primary problem is its lack of implementation. Currently, there are no operational medical marijuana 'clinics', by the definition of 'clinics' in HRS-§329-31.5.1, in the state of Hawaiʻi, resulting in a number of problems. a) The lack of medical marijuana clinics forces patients, who suffer from a lack of adequate medical marijuana, to look to alternate means of acquiring their prescribed medicine; this constitutes a deviation from the established regulations put forth in HRS-§329-31.5.1. b) Patients have to negotiate sometimes turbulent fluctuations in production of their medical marijuana supply; the lack of 'clinics' often deprives patients of a consistent supply of quality medication.

The lack of 'clinics' may seem to be a problem affecting only the interests of patients and not the interests of the gubernatorial body at large. This misnomer, however, could not be further from the truth, since 'clinics' are required for effective record keeping as well as quality control. Effective record keeping is required in order for the state to tax medical marijuana sales. And if medical marijuana distribution is not taxed and not regulated, it creates a void in the market, and one that will inevitably be filled by Weed-mongers and the Black-market. A 'Weed-monger' is defined to be a person who illegally profits from the untaxed sale of marijuana in the State of Hawaiʻi, and is a cause for concern for the gubernatorial body as well as for medical marijuana patients, primarily on account of patient safety. The Black-market, which is best thought of as the enterprise of Weed-mongers, can be as dangerous as any other unregulated market. The existence of the Black-market, the requirement of medical marijuana patients to acquire supply, and the lack of pharmacists and clinics to regulate safety and quality of transactions, constitute a danger to medical marijuana patients and a cause for gubernatorial concern. Patients are often forced to the Black-market and its Weed-mongers. This illegal underworld that now exists is filling a niche that was reserved by HRS-§329-31.5.1 for medical marijuana clinics in Hawaiʻi; a niche that could be better used to provide more money for the State of Hawaiʻi in the form of taxes.

First Problem of HRS-§329-31.5.1 – Lack of 'clinics' force patients to rely on horticultural experience to obtain their 'adequate supply':

Patients that are unable to maintain an adequate supply, whether from lack of horticultural experience, natural disturbances in the growth cycle of marijuana plants, careless marijuana consumption, or another reason, are forced to turn to another source in order to obtain their prescription. These sources for marijuana have no government oversight establishing quality control, as defined in the form of 'affiliated pharmacy' in HRS-§329, "which supplies and monitors the controlled substances." (HRS-§329-31.5, 2000) Given that a lack of medical clinics means no supplier and no monitor, the "uninterrupted availability of marijuana" for patients must come from a) other medical marijuana patients, which is illegal under the definition of "medical use" (HRS-§329-121, 2000), or b) the Black-market, which is illegal under the Prohibited acts related to drug paraphernalia, which could lead to the conviction of a patient for a Class-C felony (HRS-§329-43.5.b and HRS-§329-41.8.b, 2000). This quandary, which vexes patients, results in a contradiction between the law which theoretically promises patients' rights, and the law which establishes limitations upon patients that interfere with the earlier promised rights. Is this the "most appropriate delivery or level of service" available in our state (HRS-§432E-1.4.b, 2000)?
Second problem of HRS-§329-31.5.1 – Lack of government approved 'clinics' means no quality control for medical marijuana patients:

A simple Google search reveals the extent of the discrepancy between medical marijuana quality in Hawai‘i, and medical marijuana quality in the other fifteen states that approve its medical use. For example, a Google search of 'medical marijuana dispensaries in California' will reveal various dispensaries and indexes for dispensaries located in California. Conversely, if one were to replace 'California' with 'Hawai‘i' in the Google search-bar it would reveal a dissimilar state of affairs, as there are currently zero operational medical marijuana clinics in Hawai‘i. A quick review of one of the many online dispensaries in California will demonstrate the vast selection of medical marijuana strains and paraphernalia (Marijuana paraphernalia, defined as 'Drug paraphernalia' in HRS-§329, is legal in both Hawai‘i and California for registered medical marijuana patients).  

An example of a dispensary in California is the 'Cannabis Creations Wellness Cooperative' which, on its website, advertises 43 different marijuana strains, 28 varieties of edibles, 19 types of concentrates, and 3 marijuana drinks (Cannabis Creations Wellness Cooperative, 2010). Meanwhile, medical marijuana patients in Hawai‘i, who grow their own supply, are handicapped by much smaller scale growing limitations. These growing limitations, when outside of a controlled environment, can lead to deficiencies in a patient's medical supply, some of which can be hazardous to a patient's health. Neuromusculoskeletal specialist, Dr. John M. McPartland published an article on the subject in the Journal of the International Hemp Association. In his examination on the use of marijuana as a medicine, he concludes that:

“Carefully cultivated and harvested marijuana harbors a minimum of hazardous microorganisms. For added protection, material must [italics added] be screened for contamination before it is packaged for use as medical marijuana. Since opportunistic infections pose the greatest danger to immunosuppressed consumers, marijuana should be sterilized, preferably by gamma irradiation. Lastly, consumers must be given careful instructions to ensure their marijuana does not become contaminated prior to use.” (McPartland, 1994, p.44)

The State of Hawai‘i currently takes none of the precautions advised by Dr. McPartland to ensure the safety of patients. Moreover, the State of Hawai‘i has fallen behind other progressive states that have legalized medical marijuana. States such as California which provide quality control for patients also supplement their states' budgets by taxing this commonly traded commodity. It is therefore highly recommended that the State of Hawai‘i move toward implementation of medical marijuana clinics throughout the islands.

Third problem of HRS-§329-31.5.1 – Lack of 'clinics' contradicts various other sections of HRS-§329.

As there are no operational clinics in Hawai‘i, as defined in HRS-§329, the duties and responsibilities that clinics would provide in the State of Hawai‘i are left unattended. This is more than just an inconvenience placed upon the gubernatorial body, it is an issue that harms the state, and potentially compromises patients' rights. Duties outlined in HRS-§329 that have yet to be properly implemented include education and research with an aim to “assist... in contributing to the reduction of misuse and abuse of controlled substances”, and no program or institution has yet been implemented to address the issue of 'abuse' of medical marijuana. (HRS-§329-58.2, 2000)

In the section entitled 'Rules', under “Part III. Regulation of Manufacture...”, we find reference to the “...dispensing of
controlled substances within this State”, and yet there is no oversight to the dispensing of controlled substances within this state to be talked about. (HRS-§329-31, 2000) The sections entitled “Records of registrants” which outline that “Persons registered to manufacture, distribute, prescribe or dispense controlled substances under this chapter shall keep records and maintain inventories in conformance with the record-keeping and inventory requirements of federal law...”, yet there is no record-keeping on the distribution of medical marijuana in this state to be talked about. (HRS-§329-36, 2000) The “Filing requirements” section of HRS-§329 is moot because no person in Hawai‘i is registered to dispense marijuana, and therefore no records of their transactions exist to be filed. (HRS-§329-37, 2000) The issue of missing clinics in the State of Hawai‘i, therefore, greatly needs to be addressed by Hawai‘i’s elected leadership, and any conflicts for patients’ rights need to be resolved.

Fourth problem of HRS-§329-31.5.1 – Has yet to address the evidence of a strong desire for 'clinics' amongst medical marijuana patients:

Outline of study: The recent Hawai‘i Medical Cannabis Working Group 'Questionnaire' (2010) surveyed one hundred and one medical marijuana patients in Hawai‘i, providing an accurate representation of the perception of patients toward the current situation regarding medical marijuana clinics in Hawai‘i. Of primary interest in the survey's results is the comment section in which patients stated their opinions. These comments provide a very clear testimony of medical marijuana patients in Hawai‘i and their often quite common hardships and grievances. Their comments are so similar and repetitive with regard to clinics, they are worth sharing:

Commenter #1: “[Marijuana] should be grown under controls...and taxes should be paid to the state”.
Commenter #3: “Wellness centers i.e. medical cannabis dispensaries...”.
Commenter #5: “We really need a regulated cannabis store...”.
Commenter #6: “We need badly, a safe environment to purchase our medical marijuana...”.
Commenter #8: “I would like to see.... Safe access for patients.”.
Commenter #10: “Why are there no dispensaries?”
Commenter #17: “We really need a regulated cannabis store.”
Commenter #21: “It was too hard to find quality, safe, medical [cannabis]”.
Commenter #22: “Please allow med patients and caregivers a chance to create collectives/cooperatives for growing and distributing safely”.
Commenter #25: “…[desires] the development of a clinic and socially acceptable dispersal point for patients.”

Notes on comments: The comment section of the questionnaire continues in a similar fashion, illuminating the desire of medical marijuana patients for proper medical marijuana clinics. This topic of clinics is clearly an area of concern for patients as sixty three of the one hundred and one patients surveyed marked that they “can’t wait”, one of five possible answer choices, to “acquire [their] cannabis from a regulated store / shop / clinic” (See Hawai‘i Medical Cannabis Working Group questionnaire, 2010, which is available online). This should be of interest to the careful reader, as this was an open, undirected question to which patients' answers were unanimous regarding clinics. It is the comments of the patients themselves that best reveal the frustrations and dissatisfaction they face:

Commenter #26: “Why? If we have a license, do we not have a dispensary?”
Commenter #28: “…[why] can't I go down to a dispensary and buy a bag of weed?”
Commenter #29: “We need our medicine
to be readily available.”
Commenter #30: “We need our medical
to be readily available for all patients.”
[sic]
Commenter #33: “We need a clinic....”
Commenter #34: “We need a place
where we can get medicine and clones.”
Commenter #36: “Need for dispensary.”
Commenter #41: “It would be very nice
to have clubs, like California.”

Analysis: There were forty-one
total comments left by medical marijuana
patients out of the one hundred and one
total participants that took the questionnaire. There are five comments left by patients that are unavailable for examination, leaving thirty-six total comments left by patients that express their feelings and concerns about the medical marijuana situation in Hawai’i, of which eighteen of the comments were unambiguously in agreement about the existing need for improving the safety of Hawai’i’s medical marijuana distribution methods. Compare the comments on dispensaries to one of the other prevalent themes amongst the comments of the thirty-six patients: the group of patients surveyed that commented about ‘increasing the maximum number of plants allowed’. These commentators, totaling four patients, when compared to the eighteen patients who commented on ‘improving the safety of distribution’, provides a difference of four hundred and fifty percent between ‘clinics’ and any other trend in the study.

Conclusion on study: The definitions put forth in HRS-$\$329$ are fallacious and they insufficiently regulate the patient’s control over adequate supply, placing patients’ rights at odds with the law. Marijuana is misclassified as a ‘Section I’ controlled substance and requires a more accurate classification. Finally, as supported by the consensus of medical marijuana patients, the current distribution system for medical marijuana is unsatisfactory and sometimes dangerous for patients. Medical marijuana clinics must be implemented for record-keeping, quality control, and convenience of transaction for the patients.

Conclusion

Recommendations for HRS-$\$329$ found during preliminary investigation:
There are three primary areas of concern for Hawai’i’s medical marijuana laws. First, it is recommended that Hawai’i’s leadership review HRS-$\$329$’s definitions of: ‘adequate supply’, ‘mature marijuana plant’, ‘immature marijuana plant’, and ‘usable marijuana’. Refining these commonly used terms will eliminate ambiguities and alternative/unintended meanings or implied conclusions. Second, the lack of proper medical marijuana clinics, as outlined in HRS-$\$329$, result in many negative consequences for Hawai’i’s patients and leadership. By properly implementing clinics, as defined in HRS-$\$329-31.5$, the State of Hawai’i may generate additional income by appropriately filling the void in the market. Third, and finally, it is recommended that the State of Hawai’i review the categorization of marijuana as a ‘Schedule I’ substance and move marijuana to its most suitable scheduling as determined by scientific evidence.

The State of Hawai’i’s available knowledge of and experience with marijuana has greatly expanded since any meaningful revision of HRS-$\$329$ has been made. With the knowledge provided by the medical community, as well as advances in science, Hawai’i’s leadership can move to protect patients while simultaneously combating the Black-market.
Footnotes

1. I will be using the same definitions and terminology as defined in the Hawai‘i Revised Statue (Hawai‘i Revised Statutes Section §329-1 and Hawai‘i Revised Statues Section: Definitions §329-121).

2. "The Hawai‘i Revised Statues Section §329" will hereafter be referred to as "HRS-§329."

3. "The Hawai‘i Revised Statute Chapter §432E" will hereafter be referred to as "HRS-§432E."

4. The effectiveness of other states (California, Colorado, Washington DC, Maine, Michigan, Montana, Nevada, New Jersey, New Mexico, Oregon, Rhode Island, Vermont, Washington) medical marijuana dispensaries can be compared by case by case to our own "clinics" in order to determine if a more effective solution exists. (15 Legal Medical Marijuana States and DC, 2010)

5. Proposition: The way in which HRS-§329.121 is written creates issues with constitute an "health intervention" (HRS-§432E-2.4.b).

Discussion: Nature will effect a plants growth regardless of growers wishes. Nature leads patients to a violation in HRS-§329-121 or patients must sacrifice medical supplies. Nature can also lead to patients un-willingly violating HRS-§329. However, medical supplies are being sacrificed to coincide with the definition of "adequate supply"(HRS-§329-121) and therefore is not true. However, if someone has un-willingly violated HRS-§329-121 to obtain sufficient medical supplies it constitutes a "Conflicts with other laws"(HRS-[§432E-2]). "Conflicts with other laws" is a necessary condition for a review of HRS-§329 effectiveness. Therefore it is recommended that there should be a review of the effectiveness of HRS-§329.

Statements: Let "nature" be denoted by "N." Let "a sufficient medical supply for the patient" be denoted by "M." Let "L" denote "a patient that abides by HRS-§329." Let "W" denote "a patient that willfully breaks HRS-§329.121 to obtain an uninterrupted supply."

6. "Rules and Regulations Governing Investigations Involving the Medical and Religious use of Marijuana" will hereafter be refereed to as "Rules & Regs - GIIMRUM."

7. This basic calculation assumes that patients supply is at zero. Even though a patient should have an uninterrupted availability to marijuana.

8. The definition of 'adequate supply' found in HRS-§329 makes use of the term 'mature' two times, including the compliment of 'mature', 'immature', which is cited. 'Adequate supply' stipulates that patients must be able to distinguish between the mature state and the immature state to comply with the numerical restrictions placed on them by: The Narcotics Enforcement Division (Patient Information for the Authorized Medical Use of Marijuana, (2002), the Hawai‘i Police Department (Rules & Regs - GIIMRUM, 2002 ). However, the definition for a 'mature marijuana plant' and a 'immature marijuana plant' is found not in HRS-§329, but in The Department of Public Safety's "Adoption of Chapter 23-202 Hawai‘i Administered Rules"(2000). It is recommended that HRS-§329 have the definitions of 'mature marijuana plant' and 'immature marijuana plant' added to the list of 'definitions' used in it's chapter.
9. These bills (Senate Bill number 905 S.D.1 and House Bill number 1191) are readily available and stand on their own merits. Review of these two important bills will be left for the reader.

10. Mr. Kleber and Mr. Rosenthal do not provide sources for reference to substantiate the statistics used for their claim.

11. For a reference on the definition and legality of medical marijuana 'drug paraphernalia' in the state of Hawai‘i, see: HRS-§329-1 definition of "Drug paraphernalia".

12. Dr. McPartland suggests that marijuana be irradiated to prevent into contamination, I do not think this necessary. Basic quality control would dramatically improve the grade of marijuana for patients in Hawai‘i, based on my personal experiences.

13. The five comments that were excluded from my analysis include three comments with only contained the text 'See Attached' (Commenter # 12, #14, and # 20). Commenter # 15 simply thanks the Medical Cannabis Working Group for the survey and makes note of there being a lot of thefts in Mountain View [Big Island]. The fifth commenter excluded was Commenter # 35, who has a medical condition that prevents him from commenting, left a note to contact him. However, no contact information was provided.

Limitations

In the process of this report I experienced several limitations. First off, many of the medical marijuana patients I spoke to preferred to remain anonymous and would only comment off the record. This compounded my problem, as the limited amount of sources on the topic of medical marijuana made referencing very difficult. However, I have spoken with several medical marijuana growers throughout my research process about the problems they experience while cultivating marijuana under the laws of the Hawai‘i Revised Statute chapter -§329. My four years of experience as both a medical marijuana caretaker and registered patient will have to suffice for the arguments made that center around the difficulties of growing marijuana.

My second limitation arose from my limited experience with Hawai‘i’s laws. To resolve this problem I looked for a lawyer. However, none of the lawyer I spoke with would relinquish their services Pro Bono.

My next limitation came from the library of the University of Hawai‘i’s Reference Desk which caused more grief for myself than material references.

However, The biggest limitation I encountered came with the numerous problems and shortcomings with the medical marijuana laws as they are implemented currently being granted to patients. To give perspective, one medical marijuana patient once told me: 'If you stub your toe, and tell [a few of the doctors in Hawai‘i] that it keeps you up at night; You could get a medical marijuana card’. I wanted to investigate this further, however, time prohibited me from doing so. Potentially there will never be a perfect medical marijuana system. But that should not stop us from identifying what problems we can and take measures to correct them.

Definitions

Definitions from the Hawai‘i Revised Statute - §329-1 (2000):

"Abuse" 'means the misuse of a substance or the use of a substance to an extent deemed deleterious or detrimental to the user, to others, or to society.' (HRS - §329-1)

"Adequate supply" 'means an amount of marijuana jointly possessed between the qualifying patient and the primary caregiver that is not more than is reasonably necessary to assure the uninterrupted
availability of marijuana for the purpose of alleviating the symptoms or effects of a qualifying patient's debilitating medical condition; provided that an "adequate supply" shall not exceed three mature marijuana plants, four immature marijuana plants, and one ounce of usable marijuana per each mature plant. (HRS - §329-121)

"Clinic" means an out-patient medical facility owned and operated by a legal entity that employs individual practitioners for the treatment of patients and which may or may not provide after-hours emergency or urgent care. (HRS - §329-31.5)

"Controlled substance" means a drug, substance, or immediate precursor in Schedules I through V of part II. (HRS - §329-1)

"Distribute" means to deliver other than by administering or dispensing a controlled substance. (HRS - §329-1)

"Drug paraphernalia" means all equipment, products, and materials of any kind which are used, primarily intended for use, or primarily designed for use, in planting, propagating, cultivating, growing, harvesting, manufacturing, compounding, converting, producing, processing, preparing, testing, analyzing, packaging, repackaging, storing, containing, concealing, injecting, ingesting, inhaling, or otherwise introducing into the human body a controlled substance in violation of this chapter. (HRS - §329-1)

"Marijuana" means all parts of the plant (genus Cannabis) whether growing or not; the seeds thereof, the resin extracted from any part of the plant; and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or resin. It does not include the mature stalks of the plant, fiber produced from the stalks, oil, or cake made from the seeds of the plant, any other compound, manufacture, salt, derivative, mixture, or preparation of the mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of the plant which is incapable of germination. (HRS - §329-1)

"Schedule I tests" A substance shall be placed in Schedule I if it has the highest degree of danger or probable danger according to the determination made pursuant to section 329-11. (HRS - §329-31.5)

Definitions from the Department of Health's Schedules of Controlled Substances

"Usable marijuana" means the dried leaves and flowers of the plant Cannabis family Moraceae, and any mixture of preparations thereof, that is appropriate for the medical use of marijuana. "Usable marijuana" Does not include the seeds, stalks, and roots of the plant. (21 USC Ch. 13 Sec. 812)

"Immature marijuana plant" means a marijuana plant, whether male or female, that has not yet flowered and which does not yet have buds that are readily observed by unaided visual examination. (21 USC Ch. 13 Sec. 812)

"Mature plant," means a marijuana plant, whether male or female, that has flowered and which has buds that are readily observed by unaided visual examination. (21 USC Ch. 13 Sec. 812)

Authors own definitions for key words

"Black-market" represents the industry of distributing controlled substances which is prohibited under State and Federal laws; Also known as the 'underground' and 'underworld'. In the context of marijuana in Hawai’i, this represents anyone who distributes for profit, without tax.
“Weed-mongers” are individuals that help make create and sustain the ‘Black-market’. These individuals distribute marijuana for profit without government oversight. ‘Weed-mongers’ are also known as 'street dealers', 'pot/weed dealers', 'marijuana suppliers', ext.

References


