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ABOUT THE LAMBDA ALPHA JOURNAL

The Lambda Alpha Journal is a publication of student papers by members of the Lambda Alpha National Honor Society and is published regularly at Wichita State University, Department of Anthropology, 1845 Fairmount, Box 52, Wichita, KS 67260-0052. Professional, avocational, student manuscripts, and book reviews of recent publications are welcome. The journal is made possible through the efforts of the Journal editorial staff residing at the founding chapter, Alpha of Kansas. Funding for the Journal is obtained through subscriptions and continuing sponsorship by the Student Government Association of Wichita State University.
I am pleased to announce the completion of the thirty second volume of the Lambda Alpha Journal, a publication of the National Anthropology Honors Society. This year’s volume presents five papers with topics in biological, archaeological and cultural anthropology. Volume 32 opens with an article by Michelle Rosner addressing the urban design of Teotihuacan and its links to Mexican mythology. The next article is by Myrissa K. Bird and discusses the different migration and population models of North America in relation to the Clovis.

Immediately following, Becky Digan gives us her own perspective on the controversial issue of female genital mutilation, while Annik Ramsey discusses the different arguments regarding sociobiology. Finally, we conclude this volume with an article by Traci Yoder addressing the role of eating disorders in Western cultures.

This years journal concludes with an updated list of chapters and advisors, followed by a recognition of past award recipients of the National Scholarship Award competition and the National Dean’s List Scholarship. The Journal staff welcomes all of the recent chapters and all new members to the society. We also want to congratulate this year’s award winners and wish them success in their future endeavors. As a chapter sponsor and Journal Editor-In-Chief, I wish to extend my appreciation to all of the advisors and officers of the Lambda Alpha chapters across the nation. I would also like thank the student authors, and the student editor, Ms. Veronica Hinkle, for their contributions to the completion of this volume.

Peer H. Moore-Jansen
Editor-In-Chief
Teotihuacan remains one of the most intriguing ancient cities of Mesoamerica because it refuses to conform to the common patterns of civilization. One issue that continues to be debated today concerns the nature of Teotihuacan's urban design. Rene Millon, in his extensive Teotihuacan mapping project, concluded that there is a definite pattern to Teotihuacan's layout, "In view of the great area seemingly subjected to planning (with streets, blocks of uniform size, and uniform grid pattern), it seems likely that Xolalpan phase Teotihuacan was the site of one of the most extensive experiments in urban planning prior to modern times" (1964: 345). Originally, researchers believed that Teotihuacan's alignment was strictly astronomical in nature; however, as excavations at the site have progressed, a newer school of thought has developed that emphasizes a topographical alignment of the city. The evidence for both arguments is compelling, and Mesoamerican cosmology can be used as a tool to justify both theories.

Cosmology is characteristically important in most Mesoamerican communities. This worldview permeated many aspects of civilization, and was often reflected in a culture's art and architecture. As A.F. Aveni writes, "Theirs was an integrated cosmic view, one that sought to interrelate every perceptual facet of nature" (1981: 164). In order to ensure health and productivity, Mesoamericans strove for order in their lives, and often turned to the supernatural to help them achieve their goals. Elements of the rich mythological tradition saturated many components of their lives and were often believed to be the catalyst for different events. To be seen in a more favorable light, communities were constructed to be physical representations of their supernatural beliefs. This factor may be particularly important when one considers how the events that destroyed Teotihuacan's southern neighbor affected the inhabitants of the rest of the Basin of Mexico. Strategically located in the northeastern portion of the Basin of Mexico, Teotihuacan enjoyed many advantages over its southern neighbor Cuicuilco. Not only is Teotihuacan situated to control a prime trade route, but the city is also located some distance from Xitli, an active volcano that buried Cuicuilco around AD 50. One can-
not overestimate the impact that this must have had on the inhabitants of Teotihuacan. In a world seeping with rich symbolism and supernatural concerns, there is no doubt that this cataclysmic event was seen as a punitive act of the gods. Following this tragedy, many Cuicuilco refugees migrated to Teotihuacan, and likely participated in a massive building campaign. According to researcher Doris Heyden,

Parallels between Cuicuilco and early Teotihuacan — talud and balustrade in Cuicuilco’s structures 6 and 7, serpentine figurines and thin orange ceramics found at this site suggest the possibility that residents of the southern part of the Valley of Mexico moved northward in the direction of Teotihuacan after the eruption of Xitli volcano in the Cuicuilco area (1975: 139).

While one can only speculate about the motivation behind the sudden building program, an urgent need to appease the gods could have been an incentive. In an effort to save the inhabitants of Teotihuacan from a similar fate that befell Cuicuilco, the leaders of Teotihuacan could have called for an extensive building campaign to pacify the angry gods. Logically, this building campaign would have incorporated, and possibly embodied, important cosmological concepts to ensure stability and longevity. Distressed by the destruction of their neighbors’ world, the inhabitants of the Basin of Mexico would have been extremely eager to build a new and safer sanctuary that was in greater harmony with their environment and the supernatural world. By aligning the city with symbolic terrestrial features or celestial objects, the builders of Teotihuacan would have provided the security and peace of mind that the citizens demanded.

For a long time, the scientific world refused to consider that the layout of Teotihuacan corresponded to a celestial pattern because the astronomical tools that had been unearthed there were rudimentary and insufficient to conduct major observations. However, in 1964, James Dow became the first scholar to suggest a celestial correlation for Teotihuacan’s urban plan, and provide a realistic method by which the necessary calculations could have been conducted (Rowe 1979: 227). In “Astronomical Orientations at Teotihuacan, A Case Study in Astro-Archaeology,” Dow explains that the streets of Teotihuacan form a clean grid pattern and, “The Street of the Dead, the Pyramid of the Sun, and most of the buildings in the central area of the city have an orientation of 15 25’ east of north” (1967: 327). This specific orientation, which is similar to the orientations of other cities and pre-Colombian buildings throughout central Mexico, could indeed be indicative of a celestial origin (Aveni and Gibbs 1976: 512). In fact, Aveni and Gibbs contend that “…on the basis of measurements made with a surveyor’s transit, three Central Mexican sites (Tepozteco,
Tenayuca, and Tula) possess nearly the same orientation as Teotihuacan” (ibid: 510). While a definite and specific pattern of orientation has been observed, the problem of how the Teotihuacanos could have used celestial bodies as precise markers has not yet been addressed. In his article, Dow points out that sophisticated tools would not have been necessary to conduct the essential calculations. “The north-south orientation could have been set either by a star with a declination in the Northern Hemisphere when it rose, or by a star in the Southern Hemisphere when it set. The east-west orientation could have been set in a similar fashion by stars that were nearer the celestial equator” (1967: 328). With this in mind, Dow suggests a possible relationship between the axial alignment of major streets and specific buildings with particular celestial bodies. Dow proposes that the city was designed to “face in the direction of the rising of Sirius” (ibid: 330), and that the Platform Adosada of the Pyramid of the Sun is actually aligned with the sun at its zenith (ibid: 332). However, the most interesting idea presented by Dow is that the Pleiades constellation is aligned with the Street of the Dead, the north-south axis of the entire city. In his reasoning, Dow concludes that the Pleiades is a strong candidate for a reference marker for the city of Teotihuacan not only because its coordinates are aligned with the city, but because of the constellation’s prominent role in historical documents that relate to Mesoamerican cosmology. “The Pleiades may have been of significance because their celestial position related them to a particular astronomical phenomenon, the first yearly passage of the sun at the zenith, which was probably regarded as important at Teotihuacan” (1967: 329). Dow also points out that the constellation is thought to be represented in carvings by a “hand-held hook-like object with a feather tail below the handle and a hooked blade above” (ibid: 329). Later scholars and supporters of this theory, including Aveni and Gibbs, emphasize that the Pleiades is significant to other Mesoamerican cultures and that even today, it is still “used among contemporary Chorti Maya to demarcate planting season” (1976: 517). While the arguments made by Dow and other scholars are compelling, there is an entirely different theory that proposes Teotihuacan is aligned with major features of the local topography.

In 1971, archaeologist Ernesto Taboada discovered a four-chambered cave located directly underneath the largest and oldest Teotihuacan structure, the Pyramid of the Sun. Heyden writes, “The existence of this cave must have been known when the Pyramid of the Sun was built inasmuch as the entrance to the 103 meter long tunnel coincides with the middle of the pyramid’s original central stairway under the center of the pyramid” (1975: 131). There is evidence that the cave beneath the Pyramid of the Sun was used by the Teotihuacanos for rituals because of the modifications made to the natural structure.
and the debris found within. Heyden and other supporters of the topographi-
cal orientation theory of Teotihuacan assert that the city was designed around
important geological formations and cite the existence of the cave beneath the
Pyramid of the Sun, the oldest structure at Teotihuacan, to be sufficient evi-
dence. The significant role of caves in Mesoamerican cosmology reinforces
this theory.

It is well known that caves were sacred to the people of Ancient Mesoamerica.
These sites were regarded as gateways to the supernatural realm and were con-
sidered very powerful. The cave is the symbol of creation, of life itself; the re-
ligious history of Mesoamerica is impregnated with this theme. Representa-
tions of caves abound in pictorial codices, both historic and religious, and the
large number of place glyphs containing the symbol for caves indicate that
they constituted an important element in town sites (Heyden 1975: 134).

According to Mexican mythology, the cave is considered to be a kind of birth-
place for creation. Many deities, including the sun and the moon, emerged
from caves, and Tlaloc, the storm god, was believed to have resided in a cave
(ibid: 134). Given this knowledge, and the circumstances surrounding the
building of Teotihuacan, it is only natural that the inhabitants would have
taken advantage of such a sacred feature of the environment, and used it to
strengthen and protect their new city. While the cave may explain the location
of the Pyramid of the Sun, other nearby topographical features may have con-
tributed to the rest of Teotihuacan’s urban design. Historical documents show
that mountains are a prevalent feature of Mesoamerican cosmology, and Teo-
tihuacan is near Cerro Gordo, a volcanic mountain. There is evidence to sug-
gest that the Street of the Dead is actually aligned with this landmark. John
Hubbard Rowe and Stephen Torbriner spearheaded this theory in the early
1970s. Both men assert that Cerro Gordo is particularly important to Teoti-
huacan not only because it is the largest mountain in the vicinity, but because
it is also a valuable source of water (Rowe 1979: 228). These scientists con-
tend that the Street of the Dead is actually aligned with this local geological
feature, and not with the Pleiades constellation, as Dow and his supporters
suggest. This theory is particularly intriguing when one considers that a vol-
cano destroyed Teotihuacan’s former rival Cuicuilco. In order to protect their
new endeavor from a similar disaster, the builders of Teotihuacan would have
sought harmony with the local environment. One way to achieve this, would
have been to align their new city with the powerful and dangerous Cerro
Gordo volcano. Aligning the city with such a mighty body could be inter-
preted as an attempt by Teotihuacanos to have a peaceful coexistence with
dangerous forces of both the supernatural and physical worlds. Rowe and To-
briner also postulated that Cerro Gordo was an important source of water for
the city. In her article, Heyden acknowledges "an emphasis on water-earth
deities in Classic Teotihuacan" (1975: 143), which lends support to Rowe and
Tobriner's idea. Other significant evidence supporting this hypothesis is seen
in the mural paintings at the Tlalocan structure. According to Hoopes, the
murals here depict "two rivers flowing from a mountain source" (1998: 10).
Another portion of the mural portrays "dancing figurines...in streams of
abundant water flowing from (a) mountain" (ibid: 11). Perhaps these murals
demonstrate the Teotihuacanos' belief that Cerro Gordo was the city's source
of water. Whether Cerro Gordo was viewed as a life-giving source of water,
or a threatening, destructive entity, it is highly probable that Teotihuacanos
would have sought harmony through alignment with this dominating geological feature.

There is little doubt that Teotihuacan is a planned urban community that fol-
lows a specific pattern. Unfortunately, with no surviving records to indicate
the nature of this precise pattern, scientists and researchers can only theorize
about Teotihuacan's design. Dow, Aveni and Gibbs propose that Teotihua-
can's urban plan is celestial in nature, and argue that the city is aligned with
significant celestial bodies including the sun, the star Sirius and especially the
Pleiades constellation. On the other hand, other scholars, including Heyden,
Rowe and Tobriner, argue that Teotihuacan's layout corresponds to important
local geological features, such as the cave beneath the Pyramid of the Sun and
the nearby Cerro Gordo volcano. Different aspects of Mesoamerican cosmol-
ogy support both theories.

The strongest evidence for an overarching theory of the influence of cosmol-
ogy is found in their explanations for the alignment of Teotihuacan's north-
south axis, the Street of the Dead, because this major avenue affects so much
of the remaining areas of the city. The Street of the Dead was the cornerstone
of the city, and according to Millon, "Streets have been found at various
points both west and east of the Street of the Dead; their orientation is always
that of the Street of the Dead or at right angles to it" (1964: 350). Dow and
his colleagues provide provocative evidence that the Street of the Dead is
aligned with the Pleiades constellation. However, Rowe and Tobriner also
provide substantial evidence that suggests the Street of the Dead is actually
aligned with nearby Cerro Gordo. I doubt the answer to this perplexing de-
bate is so simple.

After reviewing the data in the academic journals, I have come to believe that
Teotihuacan's urban plan is a combination of topographical and celestial fac-
tors. The fact that Teotihuacan's aligning coordinates correspond to other
Mesoamerican cities supports the notion that some sort of celestial pattern,
independent of local conditions, is observed in the city’s layout. On the other hand, the Tlalocan murals, which depict water flowing from a mountainous source, give merit to the idea that Teotihuacan was originally designed to be in alignment with the Cerro Gordo. Given the evidence discussed above, it is possible that Teotihuacan’s urban plan is the result of alignments with both celestial and topographical features.

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The disagreement among archaeologists about the when and how of the populating of the North American continent has produced a wide range of models and ideas. These include how people came to the lower 48 United States; how they proceeded to populate the continent; the number of migrations; and when the migration(s) occurred. Most of the arguments in North America centers around the Clovis-first theory, which involves the migration of big-game hunters from Beringia/Asia who rapidly spread Clovis technology across the lower 48 United States (Surovell 2000:493-494). Clovis culture seems to have spread across the continent between 11,200 and 10,900 B.P. (Whitley and Dorn 1993:62), suggesting that the first migrants came onto the continent by at least 12,000 B.P. With sites such as the Meadowcroft Rock Shelter in Pennsylvania (Meltzer 1989:471) and South American sites that seem to contradict the Clovis-first model (Whitley and Dorn 1993:629-633), a growing number of archaeologists are questioning preconceived notions about the colonization of the Americas and hence, getting into an academic debate about the nature of the migration into the New World and the validity of certain sites (e.g. Adovasio et al 1992:327-331). As sites such as these continue to be discovered, it will change the debate of the earliest Americans and Clovis.

The nature of this paper is not to definitively settle the dispute about the earliest Americans, but instead to present and assess different models for migration, population in respect to the Clovis culture. This is to not assume either a pre-12,000 B.P. occupation of the New World or that such an early migration is impossible. Rather, it is to look for the way through which this migration took place and its implications on the Clovis culture. The routes of migration to the lower 48 United States, the models for populating the continent, the number and nature of the migrations, and the implications for Clovis culture will be examined. Although Clovis culture represents the earliest known North American tradition (Meltzer 1989:471), it does not mean that it was
carried across the continent with the earliest inhabitants, but instead, it may have developed in North America as a specific adaptation, and then spread across the population.

The "Ice-free" Corridor and Coastal Migration
Beringia, the continuous land area exposed when the Bering Sea level dips below 46 meters from its current levels (Meltzer 1989:474) is generally agreed to be the means by which the first migrants came into North America (Fladmark 1979:55). The final time this lowering of sea level occurred was between 35,000 and 14,400 B.P., with Beringia being traversable as late as 10,000 B.P. (Bloom 1992; Hopkins 1982). Migration from Beringia to the North American continent would have been possible between 35,000 and 19,000 B.P., as well as between 14,000 and 12,000 B.P. (Meltzer 1989:474). Until recently, most archaeologists agreed on the use of the "ice-free" corridor to reach what is now the lower 48 United States (Anderson and Gilliam 2000:44). The inhabitability of this corridor, flanked by the Cordilleran and Laurentide ice sheets, is debated by Fladmark (1979:56), who proposes coastal migration as a more reasonable alternative to the "ice-free" corridor. Fladmark (1979:43-44) points to conflicting dates for viable passage through the corridor as an initial sign of weakness in presenting the "ice-free" corridor as a possible route for migrating populations. Even though Anderson and Gilliam (2000:49) do approve of the corridor from an ease of entry standpoint, this is based on the traversability of the land, rather than whether or not the corridor was indeed open or inhabitable. The description given by Fladmark (1979:56) of the terrain inside the corridor is one that, if in fact it was unglaciated, is composed of many lakes, possibly biologically dead, as well as a very different environment from that of Beringia, the migrating peoples probable last home. Evidence for "significant biotic communities" in the middle of the corridor is also lacking (Fladmark 1979:57). Without these communities, it is unlikely that the proposed terrestrial large game hunters (Diamond 1987:580; Haynes 1982:397) would come across Beringia simply to plunge themselves into the drastically different environment of the "ice-free" corridor, and even less likely that they would have survived the passage through this hostile environment into the lower 48 United States.

Along with the objections to traversing the corridor, there is lack of archaeological evidence to support an initial population coming from this route (Fladmark 1979:57). The oldest sites in the lower 48 United States do not occur at the margin of the ice sheets as expected, but farther south. Also, on the remaining exposed land of Beringia, there are, as of yet, no sites dated between 25,000 and 13,000 B.P. (Fladmark 1979:57), which would seem neces-
sary if the migration were to be ancestral to Clovis culture in the appropriate time frame. Obviously, Fladmark’s idea about coastal migration needs to be explored in order to explain the populating of North America, especially the United States. To examine the coastal migration theory, the hospitality of the terrain along the coast must first be determined. During the Eagle Creek/Vashon Stade of the last ice age, which ranges from about 19,000 to 15,000 B.P., the early evidence suggests that glaciation in the last main ice advance would have been incomplete (Fladmark 1979:58). After extensively reviewing glaciated and unglaciated coastal areas, as well as sea levels, Fladmark (1979:60) concludes that the northwest coast of North America probably closely resembled that of modern-day Greenland, “with a discontinuous strip of unglaciated terrain along the outer coast and seaward slopes, flanked by glaciers flowing out from mountain sources and from icecaps occupying inner coast and interior basins.” Not only were regions often unglaciated, but also six North Pacific areas are said by Heusser (1960) to have had significant floras communities that survived during the last glaciation. These areas generally correspond to the ice-free areas along the coast that are discussed by Fladmark (1979:61). Using floral and faunal studies that date to as early as 15,000 B.P., Fladmark (1979:61) proclaims that not only is the coast inhabitable, but it would be an easier passage than that of the “ice-free” corridor.

Lack of archaeological evidence and feasibility are two issues that need to be addressed when discussing coastal migration. As for the archaeological evidence for inhabitation of the coast, Fladmark (1979:62) surmises that rising sea levels would have essentially submerged archaeological deposits left by those living on the coast, or at least reworked the deposits. Fladmark (1979:61) also points out that the lack of migrational archaeological evidence in the “ice-free” corridor is not due to submergence in water or a lack of attempting to find relevant sites supporting the corridor proposal: they are simply not present. Anderson and Gillam (2000:49) point out that PaleoIndian people seem to have used watercraft and that the coastal route may have been the only option available to them during many time periods. Johnson (1970) comments that people have been able to use watercraft for 30,000 years, and Fladmark (1979:63) is simply taking the next step, saying that, given his description of the north west coast of North America toward the end of the last ice age, people with “any kind of steerable watercraft” could have navigated down the shoreline.

The broader implication of this is that the first people in North America were not terrestrial big-game hunters, but instead already adapted to maritime or semi-maritime lifeways (Fladmark 1979:63). This implies that the Clovis cul-
ture was not carried onto the continent with the original migrants, but was a specific lifeway that developed once the North American continent was already beginning to be populated.

**Populating the North American Continent**

Three strategies for populating the area that is not the lower 48 United States are Martin’s wave migration model, string-of-pearls model, and leap-frog model (Anderson and Gillam 2000:57-59). Martin’s model of wave migration, also called the Martin overkill model, assumes a population growth rate of 3.4 percent per year, 16 kilometers of movement per year, and an average population density of .4 persons per square kilometer (Mosiman and Martin 1974). Although there have been other wave migration models (e.g. Hassan 1980:201-203 and Haynes 1966), Martin’s model for wave migration appears to be the most widely accepted (Whitley and Dorn 1993:627). The string-of-pearls model relies on fissioning of groups and movement into adjacent territories by either the parent or daughter groups created from the break-up of the original group (Anderson and Gillam 2000:57). The leap-frog model also relies on fissioning and movement of groups, but relies on the moving group to go an “appreciable distance” from the parent group (Anthony 1990:902-903). Of these three scenarios, the leap-frog model is most explanatory of current archaeological evidence (Anderson and Gillam 200:58-59).

Martin’s wave migration overkill model has met with severe criticism, such as Whitley and Dorn (1992:627-629). The reproductive success needed to sustain a 3.4 percent population growth and the mobility without fissioning are not only unlikely, but the analogies Martin uses to get his rates are ill-founded (Whitley and Dorn 1993:627). Martin’s analogy for his population growth is based on sedentary fishing village inhabitants of Pitcairn Island during the eighteenth and nineteenth centuries (Martin 1973:970). Using these sedentary fishermen of that age to establish population growth for Paleoindian hunter-gatherers is not acceptable, according to Whitley and Dorn (1993:627). To establish his rate of migration rate of 16 kilometers per years, he draws an analogy from displaced pastoralists fleeing a collapsing Zulu state (Martin 1973:974). Once again, Whitley and Dorn (1993:627) rightly argue that this is a bad analogy, considering the migrating people were moving away from a perceived threat and through already occupied territory. It seems that in order for Martin’s migration model to work, the Paleoindians migrating across the North American continent would have needed a purpose to move in a forward direction, heading for the coasts, and have had unreasonably high reproductive rates. Even then, the model is still faced with leaving too dense of a population spread across the continent.
The string-of-pearls model experiences problems as well (Anderson and Gillam 2000:57), but not to the extent of Martin's overkill model. Since the fissioning bands would have only moved short distances from each other, it would take longer to populate the continent, and also produce population densities too high to be in agreement with archaeological evidence of Paleoindian habitation (Anderson and Gillam 2000:57-58). If archaeological sites were located in a less scattered manner, and the actual migrants had populated North America in a slower manner, then the string-of-pearls model would be indicated. Even if the string-of-pearls model is taken through alternative routes, such as along the coastlines, the migration still does not occur quickly enough, and it does not leave the scattered manner of early population evidenced in the archaeological record (Anderson and Gillam 2000:58). This lack of conformity of the archaeological record is unacceptable when debating a model for population dispersal in the New World. Unfortunately for the proponents of the string-of-pearls model, the archaeological evidence needed to support it is simply not there (Anderson and Gillam 2000:57-58).

The leap-frog model more adequately conforms to archaeological evidence, such as the apparent unoccupied areas between Paleoindian sites in North America (Anderson and Gillam 2000:59). As groups fissioned and moved, they would go to what Beaton (1991:220-222) calls "megapatches," where resources, both biotic and others, are abundant. This would produce a sprinkling of Paleoindian groups across the landscape, and this is indeed what is observed in the archaeological record (Anderson and Gillam 2000:59). This initial sprinkling of groups would have given room for Paleoindian populations to fill in later via future generations (Anderson and Gillam 2000:60). These moves of an "appreciable distance" could also be responsible for the rapid spread of Paleoindian groups across the continent, definitely faster than the string-of-pearls model predicts (Anderson and Gillam 2000:58-59). In reviewing the archaeological data available at this time, the leap-frog model most accurately fits into the understanding of Paleoindian peopling of the New World. Instead of relying on leaving a large population across the landscape, as Martin's overkill model did, or settling near the parent group, as in the string-of-pearls model, the leap-frog model both covers the large distances required in the time allotted and leaves the appropriate scattering of people across the continent.

Multiple Migration Evidence and Ideology
Given dental, genetic, and linguistic evidence, it seems apparent that there may have been multiple migrations into the North American continent (Greenberg et al. 1986:477). David Meltzer (1989:473-483) points out that
regardless of the models proposed for the population of the New World, there is always the possibility of multiple migrations, many of which could have failed and therefore be irrelevant in the discussion of their ancestry to the pre-European contact populations of North America. Linguistic, genetic, and dental evidence are all used to provide reasons for multiple migrations, most likely three total successful migrations (Meltzer 1989:473-475). According to linguistic analysis, there seem to be three distinct language groups comprised of the Amerind, Na-Dene, and Eskimo-Aleut (Greenberg et al. 1986; Ruhlen 1987). The Amerind migration is the most closely associated with Clovis (Meltzer 1989:473). These three groups are not easily explained by a single migration, but are indicative of as many as three migrations into the Americas (Greenberg 1987:333). However, this "does not in itself prove that there were three distinct migrations from Asia" (Ruhlen 1987:10). In the most simplistic terms, linguistic evidence points to probably more than one, but definitely no more than three successful migrations into the New World. Although dental and genetic evidence do support the findings of linguistic evidence, it is still not conclusive enough to prove that there were indeed three successful migrations (Meltzer 1989:475). A dribble of migrations, Meltzer (2000:483) believes, may have characterized the peopling of the Americas. These migrations, according to Meltzer (2000:483), could have been either successful or failures, the result of which would be the extinction of the failed population. Although Butzer (1988:201-202) points to gaps in the archaeological record during Paleoindian times as an error in the choice of geological settings by archaeologists, Meltzer (1989:483) proposes that these gaps could be indicative of failed migrations. This dribbling of migrations, many of which may have failed, characterizes Meltzer's view on the populating of the New World. Meltzer (2000:482) further argues that although there may have been a pre-12,000 B.P. migration, it does not necessitate that it is ancestral to Clovis culture. In the face of a successful Amerind-Clovis migration, Meltzer (2000:482-484) argues that this means that a migration of non-Clovis ancestors prior to 12,000 B.P. could have left scant archaeological evidence, and then become extinct, therefore being insignificant insofar as the actual populating of the Americas. Although Meltzer (1989:473) does suggest genetic and linguistic evidence for multiple migrations onto the North American continent, he suggests that archaeologists must first and foremost rely on the available data from their own discipline, which neither negates nor definitively proves the timing or number of migrations. According to Meltzer (2000:483-484), the greater significance is that there was a group or a coming together of groups that finally comprised Clovis, the earliest defined archaeological complex in North America.
Implications for Clovis
As indicated in all three preceding sections, it is possible that Clovis culture likely did not come with the colonizers of North America, whether or not the people who would eventually comprise Clovis were the first to arrive on the North American continent. Fladmark (1979:63) argues that the people first to arrive in the lower 48 United States were probably at least semi-maritime adapted, therefore negating the idea of big-game hunters coming through the “ice-free” corridor and expanding across the continent (Diamond 1987:50; Haynes 1982:397; Martin 1987:12-13). While this idea goes against the majority of the current archaeological schools of thought, it may, in fact, be very likely. After all, there is the lack of evidence for big game hunting in Berin gia and through the “ice-free” corridor (Fladmark 1979:57) for the appropriate times to establish Clovis in the lower 48 continental United States. The ideological success of the leap-frog model according to Anderson and Gillam (2000:59-60) also has ramifications for Clovis. If the leap-frog model is indeed correct, Anderson and Fraught (2000:510-512) argue that Clovis may be more of a regional adaptation from the Southeast, rather than originating from the exit of the “ice-free” corridor. It appears that Clovis was not carried with the initial leap-frog groups, but rather dispersed later, once future generations filled in the territorial gaps between the scattered original groups (Anderson and Gillam 2000:60). Instead of being a carried with founding populations across the hemisphere, the point distribution indicates that it “probably better represents the process of population in-filling and the spread of a specific adaptation” (Anderson and Gillam 2000:60). Using this Model, Clovis is Definitively and adaptation from the lower 48 United States, and probably not from the exit of the “ice-free” corridor, as has been previously assumed. Although the theory of multiple migrations or migratory dribbles may seem to have little to do with Clovis, it does state that there could have been other migrations, possibly non-ancestral to Clovis, that came before 12,000 B.P. (Meltzer 1989:484). The possible presence of such peoples does negate the fact that Clovis is indeed the “earliest, well-defined archaeological trace” currently known in North America. Although a handful of sites, such as Meadowcroft Rock Shelter in Pennsylvania, do predate Clovis, this does not nullify Clovis as the earliest recognized culture in North America or deny the fact that Clovis is ancestral to later North American populations in the lower 48 United States (Meltzer 1989:471,484).

Conclusion
In the preceding, it has been shown that the first inhabitants of North America may not have been large-game hunters but at least semi-maritime adapted (Fladmark 1979:55-65). This idea negates the notion that the first migrants in
the New World were already big-game hunters; rather it suggest that that was a later adaptation. This supports the notion of Clovis culture developing after the initial arrival of the first Americans. The leap-frog model, with the proposal of Clovis developing out of the southeastern United States, also supports the idea that Clovis culture was developed once the continent had already been populated, if only sparsely (Anderson and Gillam 2000:60; Anderson and Fraught 2000:510-512). Although Meltzer’s (1989:476,484) argument for multiple migrations, possibly in a dribbling manner, does not necessarily preclude the development of Clovis culture before the population of North America, he seems to think that it was after the establishment of at least one group and was the result of a specific adaptation.

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Women of the world are faced with constant challenges to maintain tradition in the face of rapidly changing social conditions due to globalization and culture change. When the maintenance of tradition involves human rights violations, these challenges can become life-threatening. Some human rights violations, such as sex slavery, span all the continents, while other violations, such as female genital mutilation, are more restricted and culture specific. In this paper, I address the tension over human rights and the rights of cultures to maintain and practice their traditions. The issue of female genital mutilation has been argued to be one of “the most culturally and emotionally charged battle grounds where the cultural relativist confronts the advocate of universal human rights” (Fluehr-Lobban 1998: 3). In response to the controversy over female genital mutilation, I critically consider the tension within the discipline of anthropology between moral relativists and the advocacy anthropologists who call for research, political action, educational programming, and policy making to eradicate female genital mutilation.

Some anthropologists argue for a form of cultural relativism on the issue of female genital mutilation, holding that cultures should not be interfered with and that no matter what the custom or how harmful it may be, anthropologists should not make negative judgments and impose outside values on a culture other than their own. The concern over cultural survival (the cultural right to practice their traditions), and the rights of the individual to choose circumcision are at the center of the argument that anthropologist’s should not act as advocates to eradicate the practice of female genital mutilation. Such a perspective holds that anthropologists should maintain an “ivory tower”, scientific focus by arguing that “we should never forget that a commitment to improving the world is no substitute for understanding it” (Hastrup & Elass 1990:306). For example, Rob Winthrop (2001) argued that female circumcision maintains cultural pluralism and is not necessarily a human rights issue because we cannot identify what is universally bad or good for all people.
Our challenge in contemplating female circumcision is to decide on which side of his moral bright line it belongs: with the universal "bads" or the plural cultural "goods" ... Perhaps what is most unsettling about the practice of female circumcision is its acknowledgement of the importance of communities, descent groups, and traditions. Yet Western conceptions of human rights have been almost completely predicated on the autonomy of the individual. In this cultural encounter over "human rights", perhaps some rethinking is in order (Winthrop 2001:40). I conclude this paper with the argument that such a position confuses moral relativism with cultural relativism, and that anthropologists can adhere to a relativistic perspective while simultaneously taking actions aimed at alleviating human suffering and solving human problems.

Many anthropologists, like Carolyn Fluehr-Lobban, have come to realize that a position, which rejects the possibility of universal human rights in favor of cultural rights, may be inherently flawed from a moral and empirical perspective. To advocate for the continuation of extreme forms of human suffering in order to not betray one's disciplinary ideals and the culture of one's research, may violate greater universal human rights, which inherently supercede such cultural rights. For a long time I felt trapped between my anthropological understanding of the custom and of the sensitivities about it among the people with whom I was working, on the one side, and the largely feminist campaign in the West to eradicate what critics see as a 'barbaric' custom, on the other hand. To ally myself with Western feminists and condemn female circumcision seemed to me a betrayal of the value system and culture of the Sudan ... I came to realize how deeply I felt the practice was harmful and wrong (Fluehr-Lobban 1998: 3).

The Issue of Female Genital Mutilation
In this section of the paper, I define and describe the specific practices of female genital mutilation (FGM) in order to contextualize the custom into a human rights discourse and dialogue. Depending on geography, a female may go through one of three different genital mutilations. Mary Daly (2000) provides a description of different types of Female Genital Mutilation based on Fran P. Hosken's 1976 report in WIN News:

1. **Sunna Circumcision**: removal of the prepuce and/or tip of the clitoris.
2. **Excision or Clitoridectomy**: excision of the entire clitoris with the labia minora and some or most of the external genitalia.
3. **Excision and Infibulation (Pharaonic Circumcision)**: This means excision of the entire clitoris, labia minora and parts of the labia majora. The two sides of the vulva are then fastened together in some way either by thorns...or sewing with catgut. Alternately the vulva are scraped raw and the child's limbs are tied together for several weeks until the wound heals (or she dies). The
purpose is to close the vaginal orifice. Only a small opening is left (usually by inserting a slither of wood) so the urine or later menstrual blood can be passed (Hosken 1976:30).

Each day there are a staggering number of 6000 women and girls genitally mutilated. Worldwide 135 million women are genitally mutilated (fgmnetwork.org). Women who undergo FGM are likely to have negative physical and mental consequences. According to the website fgmnetwork.org, a woman may suffer from hemorrhaging and shock to long lasting problems such as depression, sterility, painful scars, clitorial cysts, and chronic urinary tract and pelvic infections. Sometimes the consequence is death. Virginia Anikwata knew the consequences of FGM all too well, for she was genitally mutilated (Grim 2000). Virginia came to the United States from Nigeria with her husband who was attending college. The couple had a daughter. Within a few months after their daughter was born, Virginia's husband died. Virginia fought deportation because she knew that she would become the property of her deceased husband's family. She feared that the family would force FGM onto her daughter (Grim 2000). Other women's personal narratives and testimonies reveal the very real suffering and physical torture that Virginia wanted to prevent for her own daughter.

*Never will I forget the sound as scissors separated the flesh between my legs from my body. It haunts me. I had received only local anesthesia, and the pain was horrendous. I struggled to get away, but couldn't—a doctor, a nurse and my mother held me down.*

**A Somalian Woman**
http://www.fgm.org/Retzlaff.html 2001:8

*Female genital mutilation is complete castration. Millions a year, thousands of little girls a day suffer quietly under the effect. We need to ask ourselves: how can I help? What is my part? We together might be able to make a difference. I just turned six years old when my mother called me from the playground to tell me, "Today is the day for circumcision."

**An Ethiopian Woman**
http://www.fgm.org/Retzlaff.html 2001:8
Every summer a group of girls would go off [with the circumcision performer], and every year, at least one girl would not come back. We all knew why.

A Woman from Sierra Leone
http://www.fgm.org/Retzlaff.html 2001:8

I screamed with pain despite the tight hand held over my mouth, for the pain was not just a pain, it was like a searing flame that went through my whole body. After a few moments, I saw a red pool of blood around my hips.

An Egyptian Woman
http://www.fgm.org/Retzlaff.html 2001:8

FGM practitioners often describe the practice as a rite of passage for a girl to enter womanhood. In cultures where a woman’s value is based on her virginity until marriage, FGM is considered a sure way to preserve it. Proponents of FGM claim that mutilation protects young girls from ‘unwilling sexual encounters’. It must be entirely coincidental then that the same societies who practice FGM have the highest rape rates in the world. In parts of Southern Africa, one in two women will be raped during their lifetime (http://www.contrib.andrew.cmu.edu/~1grim/whitepaper.htm 2001:3). FGM may not necessarily ensure a virgin at the point of marriage in these instances. The fact that there is no guarantee that a girl will remain a virgin in these circumstances leads to other reasoning for the practice. “The fact that it is women who carry out the practice, and who are its strongest defenders, must be analyzed in terms of their weaker social position” (Brettell and Sargent 2001:481). The women practitioners of FGM are themselves placed in a powerful position due to their “skills.” They play a very important social role in these societies and have social status to lose should the practice diminish. Women in these cultures hold very little importance outside of their wifely and motherly duties, and economic independence is not readily available. Their socioeconomic status is only gained through their husband. Men want their brides to be virgins and so the cycle is viciously maintained. I am left wondering that if the tables were turned between men and women in these cultures, how often would genital mutilation happen? Would it have a place in these cultures? It seems reasonable to argue that female genital mutilation would not be practiced if women were not dependent on men for social standing and economic survival. The practice is tacitly as much about masculine power and gender stratification as it is explicitly recognized as an aspect of human sexuality. The implicit power relations which are associated with FGM provide the basis for the argument that women’s participation is not voluntary, but instead a manifestation of their subordinate position in society. Women’s acceptance
and even defense of FGM is an example of how hegemonic social systems can mystify victimization as a form of personal autonomy. Quite simply, when women argue that FGM preserves their culture, they have internalized the hegemonic ideology of their society. I fear that many anthropologists have done the same in their zeal to defend cultural rights. In addition to the socioeconomic control of FGM discussed above, the tradition may be based in other deep-rooted issues of masculine power and social control. The notion that men have higher inherent value is implicit in the perspective that what “is cultural and subject to human manipulation is assigned more worth than that which is natural; hence women and women’s roles are denigrated or devalued” (Brettal & Sargent 2001: 157). Men are the empowered in these cultures and thus are in a position to impose stipulations on what aspects are valuable and which are not. For men this is concrete and manageable. Women’s natural abilities such as menstruation, pregnancy, birth, and nursing babies are not concrete or manageable for men. Therefore, men lay stipulations on and devalue women’s natural abilities. Controlling women’s sexuality is of utmost importance due to the natural process over which men have no control. This type of thought leads to the notion that “the clitoris is ‘impure’ because it does not serve male purposes” (Ashton-Jones and Olson 2000:465). A woman’s sexual gratification is meaningless, but a woman’s fidelity is crucial. Men dictate what is proper, and preferable and women who want to ride on the coattails of the empowered live by the standards set by the men, who establish and structure the culture. The hegemonic nature of the position in which men place women, perpetuates the condemnation of women and their natural processes. This hegemonic ideology has escalated into women condemning women who defy and condemn FGM. For an anthropologist to address the issue of FGM in these cultures, she must first know where to begin and who to address first. Attempts are already being made to educate women on the physical complexities and dangers of FGM. Although many women are refusing the procedure in some cases, other women understand the risks involved and yet will not forgo the operation. In other cases, women even blame the girls for any complications which they suffer after the operation is performed.

Advocacy Anthropology and Relativism
Perhaps one of the greatest points of confusion in the discipline of Anthropology is over the issue of cultural relativism. One of the most significant problems in the debate over relativism and advocacy anthropology, is the notion that cultural relativism is the more scientific perspective. Despite this misunderstanding, it has been argued that objectivity and positivism are not exclusive to relativistic thought and that “advocacy can be dispassion-
ate, empirical, substantiated, careful in the way that it is framed, and based on very substantial information and research” (Ervin 2000: 129). As I understand cultural relativism, it simply refers to the notion that any aspect of a culture can only be understood in the cultural context in which it occurs (Rachels 1993). This understanding of cultural relativism holds that anthropologists should not condemn or defend any cultural practice when utilizing a relativistic perspective. Relativism is a perspective, which allows for a context-specific, systematic understanding of cultural beliefs and traditions. It does not involve any kind of judgment whatsoever. Suspending judgment for the sake of scientific observation and analysis, however, does not mean that such judgments cannot be later made. What is important to consider is that cultural relativism and advocacy for universal human rights need not contradict one another.

Cultural Relativism asserts that since each culture has its own inherent integrity with unique values and practices, value judgments should be withheld or suspended until cultural context is taken into account ... Theoretically, anthropologists always should be observers and recorders not evaluators of other peoples’ customs and values. While some anthropologists would still agree with this view, others, both inside the field and outside, especially in the arena of human rights, are challenging this concept. It is important to state at the outset that universal human rights and cultural relativism are not philosophically or morally opposed to one another (Fluehr-Lobban 1998:1).

I believe that confusion over the concept of cultural relativism has led some anthropologists to argue that any position of advocacy is incompatible with the scientific goals of the discipline of Anthropology (Hastrup & Elass 1990). In my opinion, this concept has been confused with moral relativism, thereby resulting in a justification for anthropologists to maintain an “ivory tower” position toward human suffering and the issue of universal human rights. Moral relativists argue that each culture has its own beliefs about right and wrong, and therefore there can be no universal human rights. To embrace moral relativism is to take cultural relativism to the extreme. Furthermore, to argue that there can be no universal morals and ethics, and consequently each culture has the right to practice whatever traditions they choose, is to advocate and defend traditions such as genocide, slavery, and torture. Surely, this is not what Franz Boas (1896) had in mind when he called upon his students to reject the comparative method in favor of a more objective, empirical, context-based approach that he deemed to be “cultural relativism”? The “ivory tower” position holds that anthropologists should not apply their knowledge to solve human problems and improve the human condition, in that such an
application violates the relativistic perspective that is fundamental to the
discipline. They argue that anthropology is essentially a science, and that
scientific inquiry should not be muddled by moralistic concerns. Some are
very skeptical about anthropological advocacy. They doubt that the practi-
tioners of a science devoted to describing and analyzing all of the behaviors
and ideologies of humanity can choose one cause and advocate it to the ex-
clusion of others. Anthropologists need to remain objective. They need to
keep a distance, avoid partisanship, and try to tell all sides of issues
(Ervin 2000: 126).

Advocacy Anthropologists as Information Providers
When those in the “Ivory Tower” turn a deaf ear to the cries for help, advoca-
cy anthropologists are there to assist. Advocacy anthropologists act on
the principle that some people in most cultures want change and the fact that
most cultures have some form of stratification which leaves their members
marginalized and dissatisfied. Cultures are not homogenous and to assume
that all individuals in a culture want to maintain tradition is erroneous. One
thing that has always been notable about anthropology is that it cannot be a
purely “ivory tower” subject; it operates with real people in real communi-
ties. Furthermore, those communities always contain internal contradictions
and confrontations as well as conflicts with other sectors of society, includ-
ing those that have power over them. Anthropologists cannot avoid these

Many women seek asylum for themselves or for their daughters in order to
not undergo FGM. This is unmistakably a desperate cry for help and a clear
sign that they do not agree with the traditions of their culture. Today’s an-
thropologists have to step away from misassumptions about cultural relativ-
ism when addressing moral issues in a culture where individuals are asking
for help. I am convinced that advocacy anthropology is the only way to
clearly and justly address morally questionable cultural practices such as
FGM. Advocacy largely deals in information and involves delivering
messages—making the vague more explicit, interpreting what has not been
properly understood, and providing new information (Ervin 2000: 124.
Advocacy anthropologists see that cultural relativism has a place, but it
doesn’t belong where human rights are being violated and people are asking
for assistance in protecting their human rights. I am left wondering if
“ivory tower” anthropologists do not get involved as advocates because they
consider these cultures as unworthy of knowledge, information, and alter-
natives. Is it the fate of these cultures that are struggling to maintain tradi-
tion, yet second-guessing their own cultural practices, to be left to fend for
themselves because of mistaken notions of cultural relativism and claims to science? Anthropologists have knowledge that should be shared with cultures in order for them to make their own educated choices. They should be allowed the dignity of making educated decisions on how they want to participate in the dynamics of today’s world. Ultimately, I am left wondering what is so difficult and controversial about sharing knowledge that might help a culture get clean water, prevent disease, or stop female genital mutilation?
I believe that it is possible to act as an advocate for some individuals in a culture, while acting to preserve it at the same time. In some situations, changes that promote universal human rights may be the key to long-term cultural survival and preservation. If a culture does not fulfill the physical and emotional needs of all of its members, it could be argued to be inherently unstable and bound to change. Advocacy anthropologists who are concerned over the needs and well being of all members of a culture, may possibly and ironically play a role in preserving that culture. When the ideas of cultural relativism, cultural survival, and universal human rights are not placed in opposition or seen as mutually exclusive possibilities, an entirely new perspective and a more creative understanding are made possible. I believe that such creative ideas are essential to addressing the problem of female genital mutilation.

Relativism and the Problem of Cultural Heterogeneity
Essentially, arguments which put forth the idea that anthropologists should not take an advocacy role to eradicate female genital mutilation are generated from a relativistic position that ignores issues of hegemony and cultural heterogeneity. Not all women in all cultures agree to genital mutilation, and many who do “choose” to accept it could be argued to have been coerced by a hegemonic system that only gives the appearance of “choice”. When all alternatives are worse than the “choice” and when women internalize their position of social oppression as appropriate and just, it is reasonable that they may accept and even defend their right to be circumcised. It is crucial that anthropologists not confuse free and informed choice with hegemonic compliance. It is this very compliance that I believe influenced the argument that circumcision is freely chosen by women and is “essential to preserve cultural context and complexity” (Winthrop 2001: 40). Maintaining an understanding of a culture in its context is of the utmost importance for an anthropologist, but what if something doesn’t neatly fit into the context of the culture? What if the basis for a cultural practice is not good for the whole culture? What if the cultural practice was based on false perceptions, which lead to physical ailments and even death to members of the culture? I believe that FGM is based on false perceptions and that it is a cultural anthropologist’s duty to help dispel false perceptions.
Final Conclusions and Reflections

In conclusion, a cultural anthropologist going into the field should have four concerns in addition to their research goal. Anthropological ethics must be followed while doing any fieldwork. To breach these ethics is a violation against the ethos of the discipline. Secondly, an anthropologist must keep the differences between cultural relativism and moral relativism in perspective. Thirdly, an anthropologist must keep in mind the Universal Declaration of Human Rights. It is important that the anthropologist has a strong hold on the concept of cultural relativism and understands that violations of human rights are not relative. Lastly, it is vital to remember that cultures are not homogenous. There are individuals in a culture who may not agree with every aspect of their culture. They may feel trapped within cultural norms and practices and therefore violated by restrictions and traditions that cause them real harm. I firmly believe that to ignore human rights in a culture when people are asking for their rights not to be violated, is a violation of humanity and the spirit of Boasian teachings on human dignity. Perhaps my perspective constitutes a moving back to Boasian tradition as much as a "moving beyond" modern ideas of cultural relativism:

Anthropologists can aid the international dialogue enormously by developing approaches to universal human rights that are respectful of cultural considerations but are morally responsible …

In this spirit anthropologists could be among the best brokers for inter-cultural dialogue regarding human rights. We have moved beyond the idea of a value free social science to the task of developing a moral system at the level of our shared humanity that must at certain times supercede cultural relativism (Fluehr-Lobban 1998: 17).

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The publication of E.O. Wilson’s *Sociobiology* in 1975 renewed the infamous controversy in scientific discourse, nature or nurture. Wilson soon became the target of a vicious attack from critics who labeled him as a genetic determinist and, furthermore, a racist. However, before Wilson’s formal introduction to the theory, scientists had been practicing its fundamentals since Darwin’s *On the Origin of Species*. Wilson’s theory would not have been established without the introduction of Darwin’s theories of natural selection and evolution. John Alcock goes so far as to say that Darwin himself was, indeed, a sociobiologist, studying the social behaviors of various species and exploring them in an evolutionary context (Alcock 2000: 17). William D. Hamilton’s work in the 1960s, presented additional support and motivation toward the rudiments of sociobiology. He is perhaps best known for the establishment of ideas emphasizing kin selection over group or population selection (Segerstrale 2000: 57). Around this same time, Richard Dawkins published his “selfish gene” theory, further buttressing the ideas of Wilson and creating a timely confidence for his publication of *Sociobiology*. So, why was it such a shock to the scientific realm? It is important that we first examine the theory itself. What is sociobiology and how is it applied? Second, we must look at both world histories and the history of scientific thought. The theory alone will not explain the controversy without a full understanding of both academic and public views on the subject at the time in which it was presented. Thus, leading us to the discussion of critical interpretations of sociobiology and, conclusively, whether or not these criticisms are based on emotional reactions or valid reviews.

**The Theory**
Sociobiology, as stated above, has its roots in the evolutionary theory presented by Darwin in 1859. Essentially, it is the application of natural selection to social behaviors of individuals. Sociobiologists, who sometimes more
passively call themselves behavioral ecologists, study behaviors of individuals within a specified species and determine which characteristics are or have been adaptive or are maladaptive to each individual. For example, the whirligig beetle's practice of gathering in groups upon the waters surface has been studied by sociobiologists who conclude that this behavior may in fact be a selected trait. The beetles that gather in groups appear to have an increased chance of survival than those who do not (Alcock 2000, 33).

Emphasis is not placed on the individual any more than it is on the individual's genes. This is where Hamilton's and Dawkin's influence enters and the selfish gene takes precedence in the study of an organism's behavior. Numerous studies have shown that individuals will selectively choose to protect those who are more like them. Some will even attack those who have different genomes. For example, Tim Beardsley's study on the tadpoles of the spadefoot toad show that although they will eat members of their own species, they will selectively chose not to eat those who are closely related, and therefore most similar in genetic composition (Beardsley 1992). Alcock provides an example of kin selection, or more suitably gene selection, among European wood ants. The queens of the colony will always have a Bb genotype. Females with bb genotype do not live to reproductive maturity. Male workers attack adult females with BB genotypes, killing them if they attempt to take a mating position. However, the male workers who attack them are those who share a Bb genotype with the queens. Workers who have a shared genotype with the "unfavorable" BB female do not engage in the attack. At least in this case, although some will call it universal, the ultimate fight is not for the survival of the individual but rather for the reproductive success of the organism's genetic code. Sociobiologists would agree that it is the genes of the individual that drive the display of specific behaviors that increase the reproductive success of the genome. Steven Pinker explains, "Humans do not have the goal of propagating genes: They have the goal of pursuing satisfying thoughts and feelings" (Pinker 1997). In other words, genes cause the organism to desire to act in ways that assist the fitness of the genome. It is a difficult theory for most humans to accept. Its acceptance requires humans to acknowledge two unsettling ideas that, to varying degrees, reduce our values of personal choice and our notion of a unique, separate, superior being. To allow any amount of genetic influence on behavior is to give up some of our free will. Such a belief provokes fear among those who think people will now be able to excuse their unfavorable behaviors, i.e. violence and aggression, as their "wiring" rather than their own conscious act. Accepting genetic influences as the forces behind human behaviors creates the notion that the human individual is a mere host, a sock on the hand of the genome puppeteer. Reducing hu-
mans to vessels is disconcerting to a species that has always placed themselves at the top of the evolution charts. But perhaps there is a less disturbing way of describing genetic influence. Behavioral ecologists now like to coin the relationship as a co-evolution. Aside from being a more suitable description, giving acknowledgement to the independent human individual, it allows for an easier acceptance from defensive skeptics. A mandatory clarification of sociobiological theory is that it is not an equivalent of *genetic determinism* that programs the *species*, but rather a *genetic potential* that influences *individual* behaviors (Alcock 1999, 2000). Sociobiologists argue that natural selection acts on the individual level and therefore the individual should be the subject of the study. Furthermore, there is no claim that species have no external influences that assist in behavioral displays. E.O. Wilson states, “... social evolution can proceed indefinitely without additional selective pressures from the environment” (Wilson 1975, 297). John Alcock comments, “Everyone knows, for example, that human social behavior is profoundly influenced by the cultural environment in which a person is reared. If sociobiologists had not figured this out, they really would deserve the scorn they have sometimes received” (Alcock 2000, 44). Sociobiologists do not imply that there is a direct relationship between a gene and a behavior, but rather that there is a genetic foundation that permits behaviors to be expressed given the right environment. An individual’s gene pattern provides the biological foundation on which an organism is capable of displaying a behavior. The genes themselves do not determine when, how, or the intensity at which a behavior will be displayed. This is where other sources from external influence come into play, i.e. culture, free will/consciousness, social pressures and values. What genes do provide are the capabilities and the limitations of an individual’s biological composition, which, sociobiologists claim is the foundation for our emotions, and intellectual thoughts.

**History and the critics**

Before Wilson’s bold introduction to sociobiology, views in the social sciences were strongly in favor of the tabula rasa explanation for human behaviors and potentials; born a blank slate, clear of all influences, and ready to enter the world and begin development with the first sensation (Ehrlich 2000, 123). The development of a true impartiality and an equal potential among all humans was grasped firmly in this belief. Any acceptance of determinism was equated with the ethnocide and racism of the earlier century. An intense quest to establish superiority shortly followed the introduction to the theories of natural selection. The term “race” was now seen as something that could finally be ranked from the best adapted to less evolved. Logically, the measuring of intelligence gained immediate attention. What could serve as a more
efficient means to claim superiority than to debunk the status of another group by declaring them less intelligent? Mental ability became a quantifiable entity to be compared and contrasted among social classes and populations. Morton's mustard seeded skulls, Broca's selective data and culturally biased IQ tests, and Arthur Jensen's racist reports were all attempts to measure intelligence with a priori zeal (Gould 1996, Molnar 1998). These same beliefs and determinations were motivated by a desire to scientifically validate the "racial" differences among people to confirm that one race was inferior to another. This led to devastating moments in our history where millions of humans were killed and abused. Their human status was reduced to that of an unfavorable species or a lower animal. Around the world, the effects that remained on people's minds in the aftermath of World War II, that still remain today, were questions of how this could have happened. The wicked rationalizations of Hitler and his brainwashing power were used to torture an entire population of people.

The Eugenics Movement began in the late 1800s and frighteningly persisted until the later half of the 19th Century. After being set in motion by Francis Galton's Hereditary Genius, published in 1869, the concept drove the latest notions of inferiority/superiority among humans to a newer, more sadistic level. His rationalization was that humans should make a conscious participation in the natural selection process. This idea was taken to the extent as to where some were denied the right to reproduce and were intentionally sterilized. People of upper classes were encouraged to produce many children to bring more intelligent, "favorable" children into society. The Eugenics Movement in England, in the United States of America, and the impacts of World War II are only a few of many horrific cases that occurred all throughout the world. Justifications were made based on denunciations of racial inferiority over and over as colonization thrived. The destruction and oppression of the Native American Indians, Africans, Australian Aborigines, and across the globe populations of people were killed, deceived, robbed and culturally sabotaged from a disgraceful system of rationalizations. With such devastation occurring so recently in the past century, which appallingly continues today, fear of a reoccurring justification for such acts should undoubtedly be condemned.

Being politically conscious, acknowledging the past, and accepting newer, more liberal studies of human societies, particularly those coming from the field of anthropology, i.e. Boas, Mead, and Geertz, social behaviors were best described as being predominately, if not completely culturally and environmentally influenced. Genetic determinism was seen as a mistake of the past.
There was not enough evidence to prove that there was genetic influence effecting behaviors. There was, however, ample evidence to prove that societal norms, values, belief systems, sanctions, etc., indeed, had an impact on individual behavior. The American Anthropological Association had long denounced the legitimacy of the term “race” (1938), however, the true shift in thought is perhaps best captured in the UNESCO statement in 1952, which banned “biological research on human behavior” (Segerstale 2000: 30). Ullicia Segerstrale further explains, “It was exactly this taboo that Wilson, and before him, Arthur Jensen, and supporters of research in the heritability of behavior, were breaking.” Only to further tarnish Wilson’s work, most researchers who claimed heritability in behavior, particularly Jensen, were publishing attempts to prove innate human inequalities, leading to an increase in assumptions that Wilson had an alternative motive (Segerstrale 2000: 263).

The two biggest names in opposition of the theory are Stephen J. Gould and Richard Lewontin, both Harvard professors with Wilson in the Biology Department. In addition to being the most outspoken of all critics, Gould and Lewontin were the shapers of the debate and molded the stereotyping and myths that surround Wilson and his work. Their attack begins from what they position as a higher, more ethical standpoint and evaluation. Many defenders of sociobiology and analyses of the debate, point out that Gould and Lewontin are falling into the politics of the time and focus more of their energies on what could happen if people misapply the theory than on the theory itself. Ullicia Segerstrale states, “Thus, what was attacked was not really sociobiology, but ‘sociobiology’, as stereotyped by the critics and feeding into political fears and antiquated popular conceptions about biology among academics and the public alike” (Segerstrale 2000, 34). Following their logic, for example, Darwin never should have published *On the Origin of Species* for fear that it could have provoked an interest in the quest for innate behavioral differences among human populations and social classes. Indeed, Darwin’s work did not have the ethnocide and the Eugenics Movement of the years to come in mind when he published his research. Applying the errors of the biased and fabricated reports that swamp the history of genes and inheritance, Wilson was categorized with a group of persons with a priori commitments and racist views, simply for stating that genes do play a role in individual behaviors, which ultimately affect their fitness. In the last chapter of *Sociobiology, Man: From Sociobiology to Sociology*, culture and environmental factors are acknowledged and it is explained why sociobiology is not the same as genetic determinism. He states, “... human genes have surrendered their supremacy in human evolution to an entirely new, nonbiological or superorganic agent, culture” (Wilson 1975: 274).
However, Wilson continues:

“Even a small portion of this variance invested in population differences might predispose societies toward cultural differences. At the very least, we should try to measure this amount. It is not valid to point to the absence of a behavioral trait in one or a few societies as conclusive evidence that the trait is environmentally induced and has no genetic disposition in man. The very opposite could be true” (Wilson 1975, 274).

Wilson’s suggestion to measure the differences between genetic and environmentally influenced behaviors between human populations sounds awfully familiar to those who have heard declarations from Arthur Jensen, Richard Herrnstein, and Charles Murray, all of whom claimed to have quantitative data that presents a lower IQ in African Americans than whites (Herrnstein and Murray 1994, Molnar 1998). In *The Bell Curve*, Herrnstein and Murray state, “The differences in test scores between African-Americans and European-Americans as measured in dozens of reputable studies has converged on approximately a one standard deviation difference for several decades”, as if their emphasis on how small the difference is will lower the intensity of their criticism. Nevertheless, Wilson stages himself for the attack with the mere mention of measurement.

Another critique of the theory, also a dependant of fears and reviews of the past, is that the acknowledgement of inheritable behaviors would minimize the significance and importance of free will and personal choice in society. Violence, aggression, and criminality could all be explained away as an innate disposition to negative behaviors. Cesar Lombroso, possibly best considered the heretic of heredity, made attempts to prove that criminal behaviors were inherited. As ridiculous as it sounds, Lombroso managed to publish his work without considering that the label of a behavior, whether it is criminal or favorable, is itself, socially defined. Even so, Lombroso claimed that if a person had five or more “abnormalities” such as long ears, square and projecting chin, left-handedness, and even an addiction to tattoos, they were likely to commit sociopathological acts (Molnar 1998: 14). Critics feared that sociobiology, similar to Lombroso’s inherited criminality, would lead to an action of public “excuses” for an inherited predisposition toward immoral behaviors. To explain a behavior, it is argued, would be a justification, or as Jared Diamond, a supporter of the theory, states, “To “explain” a behavior seems uncomfortably close to defending it” (Diamond 1992: 97).
Science and the Humanities
Dichotomies form naturally in the human organization of the world, molded by the laws of nature; for an up, a down, a day, a night, etc. With C.P. Snow's 1959 lecture, *The Two Cultures*, the awareness of a growing separatism between science and the humanities was introduced (Snow 1998, reprinted). Biology, a hard science, is seated on one side, while sociology is seated in the softer seat of humanities. Anthropology, best described as a metaphoric pillow tossed from one chair to the next, receives much criticism from both sides for not conforming to one or the other. Sociobiology is in the same boat. To continue the analogy, most of its criticism is coming from the softest spot on the "hard science" chair, namely, Gould, Lewontin, and Stephen Rose, all who have ironically been counter-accused for bringing the humanities into the sciences as well, through an a priori commitment to politics, emotional fears, and materialism (Johnson 1997, Segerstrale 2000). This dichotomy has persisted and strengthened over the years, despite the efforts of Snow to bring them together. Grant R. Steen states, "It is more true to say that sociologists and biologists have agreed to disagree; most sociologists display an appalling ignorance of basic biology, and most biologists couldn’t care less about sociology" (Steen 1996: 43-44). Perhaps they will always keep themselves distinguished and refutes against those who travel against the norm will continue. Or, will modern ideas from Wilson and even the field of anthropology, influence and help bridge the sciences and humanities?
Paul Ehrlich proposes, "The conservatism that was useful in the past is a luxury that society can no longer afford. Society also can no longer afford the split between the humanities and the sciences..." (Ehrlich 2000: 326). As unlikely as it seems, those who are in the middle are actually those who perpetuate the gap. The following statement from Gould exemplifies:

In one sense, the debate between sociobiologists and their critics is an argument about the breadth of ranges. For sociobiologists, ranges are narrow enough to program a specific behavior as the predictable result of possessing certain genes. Critics argue that the ranges permitted by these genetic factors are wide enough to include all behaviors that sociobiologists atomize into distinct traits coded by separate genes (Gould 1996, 359).

In his explanation of ranges, he continues to create to two extremes. Sociobiologists are on one side of the spectrum waving the enemy natural selection flag, while critics, including Gould, are on the other shouting culture, environment, and genetic complexity. He leaves no room for sociobiology to be as conscious as he of both genetic and environmental influences. Since they
both acknowledge some influence from each of the factors, sociobiology must, of course, accept more genetic influence than he. The argument quickly turns into a dance of degrees.

Stephen J. Gould expresses his views on genetic influence while explaining the differences between his position and that of a sociobiologist:

I believe that this old tradition of argument – which has found its most recent expression as “human sociobiology” – is invalid not because biology is irrelevant and human behavior only reflects a disembodied culture, but because human biology suggests a different and less constraining role for genetics in the analysis of human nature (Gould 1996, 356).

This “old tradition” is in reference to what he calls “a set of specific adaptive behaviors forming a biologically conditioned ‘human nature’” (Gould 1996: 356). In this statement, Gould seems to imply that sociobiologists are in fact genetic determinists, or at least extremists in the debate of degrees. This becomes a redundant argument against sociobiology. Repeatedly, scientists argue that sociobiologists claim that human behaviors are a result of an innate program, the short cut to debunking the theory. This reasoning is based on misinterpretation (Alcock 1999, Segerstrale 2000). Discourse on the degree to which social behavior is affected by environment and behavior is filled with opinion and lacks evidence. Stephen Molnar claims, while attacking Wilson, the distinction will never be conclusive:

The complexity of human behavior does not allow simple trait definition, and it is not possible to identify separate genetic and environmental components, though this was offered as a method by the leader of the more recent revival of sociobiology, E.O. Wilson in his book On Human Nature (Molnar 1997: 283).

Yet, Paul Ehrlich confidently states that he can discern when cultural influences override inheritable traits:

When it comes to the intertwined behaviors associated with violence, religion, and aesthetics, cultural evolution thus moves toward center stage, and in these areas today, invoking our genetic heritage as the cause of various behaviors can be especially problematic (Ehrlich 2000: 205).
The debate over degrees of influence eases the harm in Wilson’s proposal to measure the amount each contributes. It no longer appears that Wilson’s intentions were to search for human inequalities, but rather to settle a currently unanswered constituent that would assist sociobiologists in determining whether or not a behavior has a cultural foundation with artificially selected pressures or a genetic foundation with natural selective pressures. If resolved, perhaps both the critics and supporters of sociobiology can have factual data on which they can base their outcries.

Complexity and Determinism
Meanwhile, an outpour of criticism continues, mainly accusations of determinism or a reach too close to it. Stephen Rose argues that sociobiologists overlook the social influences and developmental processes that an organism experiences throughout its lifetime. He states, “To put the organism and its lifeline back at the core of biology means replacing the static, reductive, DNA-centered view of living systems that currently pervades biological thinking by an emphasis on dynamics process, the relationships between objects and fields, and the paradox of development by which any organism must simultaneously become” (Rose 1999).

Our environment has tremendous impacts on how we grow and develop. A major change in nutrition, particularly during times of increased needs, i.e. children, pregnancy, puberty, can have significant impacts on one’s physical potential (Molnar 1998, 224). Rose coins the term “empty phenotypes”, which carries the implication that there is a misassumption of a direct relationship between the gene and the phenotype that ignores environmentally influenced developmental stages. Alcock refutes, “Rose makes this point at great length, but his “achievement” is irrelevant, not only because sociobiologists are as aware as he of the complexity of development, but also because sociobiologists leave it to others to study how genes and environment interact during behavioral development.” Steen adds, “…individual expression of a behavior is usually so variable that it is difficult to imagine how the behavior could be inherited without invoking a role for environment. And if the environment does play a substantial role in behavior, then the inherited component alone must be insufficient to cause behavior” (Steen 1996, 106). However, sociobiologists do not imply that there is a direct relationship between the gene and behaviors as Rose implies, nor does it deny environmental impacts, but rather accepts that there is a genetic foundation that permits behaviors to be expressed given the right environment (Alcock 1999). James Schwartz further argues that the current sociobiological method of explaining social evolution is weak because it is based upon simple genetics, not recog-
nizing that fitness depends on more than one locus, let alone having environmental interactions (Schwartz 2002). But as Alcock defends, it is not of importance to the sociobiologists to explain how genes interact with the body or environment to produce the behavioral capabilities of an organism, but that there is sufficient evidence to conclude genes do influence behavior, making it feasible to study the evolution of behavioral traits. Once again, criticisms derive from a misassumption that sociobiologists do not acknowledge environmental influences on behaviors. The individual expression is not inherited, but rather the potential, or the ability to produce such a behavior is biologically inherited. The expression itself is created by the cultural, social, and/or physical environment experienced by an individual. Theodosius Dobzhansky exemplifies, “By way of analogy, genes give man his ability to speak, but do not decide just what he shall say on a given occasion” (Dobzhansky 1973).

The Quest for Truth
Despite what they may say about one another, both critics and sociobiologists are determined to uncover truths. Both opponents value the validity of science. Accusations of bad science are thrown back and forth with sociobiologists receiving the brunt of it. They were accused of not only being unable to prove their theory, but were also reduced to racist, genetic determinists whose mission was to resurface histories of genocide and oppression. Critics on the other hand were accused of not being able to disprove the theory scientifically and therefore were dismounted from their status in the scientific community and planted as figureheads in a politically motivated, fearful reaction. So, from the critics perspective, why were sociobiologists unable to prove their theory? For starters, Alcock’s statement to leave the research on genetic and environmental interaction to geneticists is quite bold in itself (Alcock 2000: 72). Such a command requires a lot of confidence to say “others” can figure out the foundation of sociobiological research later. As discussed, it can be extremely difficult, if not impossible to find the level of genetic influence on physiological phenotypes, let alone social behaviors. To emphasize further complexity within an organism itself, little or no recognition goes to cytoplasmic genomes and their interactions with nuclear genomes in addition to their influences on or from the environment (Feldman, et. al. 1994). To prove the sociobiology theory, critics insist that a sociobiologist must be able to show direct evidence on how social behaviors are influenced by their genes. Considering the complexity and intertwined involvement from numerous sources, the proof seems unlikely. Sociobiologists, however, would argue quite different. John Alcock explains that sociobiologists do not need to prove how the changes in genetic patterns have
altered behavior, what he calls ‘‘proximate causes’’, but can just focus on the
‘‘ultimate causes’’, or the functional consequences of behaviors (Alcock 2000,
26-27). He states that sociobiologists are, ‘‘…interested not in building an
accurate picture of the evolutionary steps between ancestral trait T and mod-
ern trait Z but rather in identifying the functional significance of trait
Z’’ (Alcock 2000, 77). Enough proof for the legitimacy of sociobiological
study, Alcock continues, is fundamentally in the behavioral differences that
affect the reproductive fitness of individuals. However, is this enough to
prove that genes are behind behaviors? First, we must consider that all
thought processes, decision-making, and behavior, are limited by physical
embodiment. An organism’s physiological composition will create a founda-
tion for the limits and allowances of mental capacities. Cultural evolution
cannot be considered an isolated, paralleling evolution susceptible to natural
selective pressures that do not interact with an organism’s physiological com-
position, and vice versa. However, with a more complex social system and
increased intellectual ability, cultural values, societal pressures, and life his-
tories become significant factors in determining behaviors, many of which
will influence reproductive fitness. For example, John Alcock explains that
two species that experience similar selective pressures will display similar
behaviors (Alcock 2000, 80). Alcock explains that a species that has male
paternal care, males will copulate with other male’s mates to ‘‘trick’’ them
into raising their offspring, thereby minimizing their own parental invest-
ment. Other species that also have male paternal care would be expected to
engage in the same behaviors. However, Alcock neglects to mention that
some species have additional pressures and motivations that will influence
their behaviors. He provides the weakest example possible by comparing hu-
mans, the most socially and intellectually complex species, with the behav-iors of a songbird. Male humans have numerous factors that may assist in
determining their decision in how much they will invest in their child. Hu-
mans experience social pressures, i.e. societies ideals of how to ‘‘father’’ and
life histories that will determine how much or how little they value parenting.
Social status and socioeconomic factors also effect how much paternal in-
vestment is put into the upbringing of a human offspring (Abernethey, Yip
1990). Paternal care may also be used as a form of display in some species,
therefore increasing its importance and value within those species, but not
necessarily in another species, that also has paternal investment (Putland
2001). It seems a bit of a stretch to detect a correlation in species behaviors
that have multiple factors contributing to the displayed behavior. Especially
when the reasons for displaying a behavior may vary not only between spe-
cies but also among individuals within a species. In humans, the amount of
paternal investment greatly depends on cultural values, life experiences, and
personal choice. With these factors in mind, it seems unlikely that species behaviors can be compared in the way that Alcock attempts. It is perhaps best explained that as an organism becomes more socially complex, a greater number of environmental factors must be taken into consideration. For example, an organism, such as a human or an ape, plays a greater role in the construction of their environment. This requires a closer look at notions of evolved traits or residual traits of violence and aggression. Human violence and aggression has repeatedly been classified as left over traits from a primitive ape-like ancestor. However, studies of over 100 human cultures shed light on the ideas that societies go to war more often as they become “more stratified and technologically sophisticated” (Ehrlich 2000, 212). Violence as a residual trait from chimpanzee relative seems much less valid. However, Ehrlich points out that the correlation of increased stratification and technological advancement does not necessarily indicate causation, for increased frequencies of warfare may have lead to intensified stratification and increased technology (Ehrlich 2000, 123). Nevertheless, this study indicates that a residual gene pattern for aggression inherited by our primitive ape ancestors is highly questionable. Earlier forms of man may have further developed aggressive behaviors after evolving from ape to Homo. The study may also be indicative of present day apes evolving human-like behaviors. Contrary to views on aggression as an undesirable trait, blemishing our hominid behavior, it is possible that present day apes are adopting a human-like aggressive trait; reflective of a complex, highly competitive social structure perpetuating the enhancement of a predation defense mechanism.

**Inter-special comparisons**

Sociobiology becomes increasingly problematic as it narrows its focus to the individual. Yet, sociobiologists persist that, at least to some degree, intellect is innate. This raises concern that a heritable intelligence that varies among individuals will become the focus of human categorization. However, intelligence should not be considered abstract, as Gould would desire one to believe. It is a tangible entity that cannot be quantified. The definition of intelligence itself is dependent on the cultural values defining it. The proof of innateness cannot be found among variations of individuals within or between populations of a single species, as Arthur Jenson would desire one to believe. A more accurate comparison that does confirm that intelligence is heritable is found in studies emphasizing the differences between species, an approach that is neglectfully avoided by sociobiologists. The best examples to encase this point are studies of the higher apes, such as those conducted by Savage-Rumbaugh, Goodall, De Waal, Fossey, et.al., in comparison with humans. Extensive studies of behaviors and intelligence indicate that primate thought
is limited by physical, tangible embodiment, as in the case of language. The higher apes have shown an ability to communicate and become quite proficient in sign language skills in addition to displays of body language. For example, the ability to speak is restricted by the physiological location of the thorax. It is evident that primates are more limited than humans in regard to intellect and behavior and although many patterns of thought and behaviors are similar, primate behaviors and intellect are not as variable as humans. There are established physiological limitations to intelligence. This evidence resides in inter-special comparisons, which displays, as seen in the contrasts between humans and apes, that different species have different physiological compositions whose fundamental potentials are established in genetic patterns. However, when attempts are made to compare intellectual levels within a species itself, the differences are quite miniscule and must be predominately culturally influenced. It is necessary to acknowledge all influences that act upon behavior outside the realm of the individual. Stephen Rose states, "...organisms do not exist in isolation but in populations, and populations in ecological communities involving many hundreds or thousands of different species locked into relationships which may be competitive or cooperative" (Rose 1996). Ideally, when sociobiological studies are conducted, external pressures are acknowledged. However, when influential factors may be unknown and the degrees of impact of those that are recognized are unknown, it becomes increasingly difficult to conclude why a given behavior was displayed. Furthermore, if the focus is always narrowed to the individual, the contest of individual superiority or those with adaptive or maladaptive traits, leads to ideas of racial inferiority and innately determined intelligence and social statuses when applied to humans. There are two important ideas that sociobiologists must recognize to uphold the legitimacy and credibility of their research:

1. Sociobiologists must acknowledge the uniqueness of intellectually complex species, i.e. humans and apes. As the complexity of social structures intensifies and as intellectual thought and environmental awareness expands, the amount of potentially influential environmental stimuli will increase.

2. The genetic diversity of humans is more variable within populations than among them (Molnar 1998). This, in conjunction with additional cultural and environmental influences, would create extreme difficulty, if not the impossibility, of studies on the genes role in varying human behavior using sociobiological principles, which focus on individual differences.
Responsibility
Grant Steen argues that a reason for the debate is partially because political correctness is required of social sciences, i.e. psychology and sociology, while hard sciences, i.e. biologists, are free to ignore all social consequences resultant of their research (Steen 1996). However, in this statement Steen only perpetuates the widening of the gap that divides the naturers and the nurturers or the sciences and the humanities. The attack on Wilson is evidence enough to show that scientific theories are prone to social scrutiny. “Hard” sciences and social sciences alike are both interested in uncovering truths. Human individuals and the public are responsible for the way this information is utilized, not only scientists. Darwin, for example, is not to be held responsible for the acts of Hitler and Galton! All scientists, however, do have the responsibility to base their research on scientific analyses, not on a priori commitments to unfavorable motives or social standards. The likelihood of a new eugenics or a new form of genocide deriving from the theories and methods presented by sociobiologists is unlikely. We know enough about cultural influence, and it is so passionately emphasized as we see with critics, that it seems far-fetched to think that we will ever view the human race as a genetically determined species. Any justification for human inequalities is just as good as another, whether it is based on religious superiority, or social or genetic differences. If someone has enough desire to twist and contort a theory or philosophy, such as Hitler, they will attempt to do so. It is the responsibility of all humans, not just scientists, to learn from history’s atrocities and ensure they are prevented in the future.

Conclusion
Explanations for human behaviors have swung from one extreme to the next. Emotional reactions provoked from the events of the Eugenics Movement in the 1930s and the genocides of the Second World War lead to the abolishment of studying races via the UNESCO statement in 1952 and the denunciation of ‘racism’ by the American Anthropological Association (Segerstale 2000, 32). The “biophobics”, as Wilson calls them, placed emphasis on cultural influences and genetic involvement was overlooked (Reed 1999). Sociobiology has successfully brought the gene back into light and critics are sure to keep it from stealing the show. Perhaps critics feel they must try to stop the pendulum from swinging back toward a genetically determined explanation for human behaviors. An end to the battle of extremes is needed. Determinism and free will must reach a middle ground, one that acknowledges influences from both, not one or the other. However, we have seen that as the dichotomy weakens, a new debate quickly rises to take its place: the battle of degrees. Paul Ehrlich identifies the influential degrees as
“...uncertainties about how to partition the roles of biological and genetic evolution in generating the patterns discovered” (Ehrlich 2000, 123). The argument to which has more influence must submit to the ideas that cultural and physical evolution are not parallel, but overlap and intertwine with one another so that each is susceptible to additional pressures that ultimately effect the other. If behaviors play a role in fitness, they must be recognized as a form of, or as playing a role in the selection process. The physiological composition of an organism provides the foundation that establishes the capabilities of each organism. The gene patterns of an individual determine the potential for physical capabilities, which are subject to environmental impacts such as nutrition, exercise, and social stimulation. Sociobiologists must be cautious when studying socially complex species that they do not assume all behaviors to have their origins rooted in reproductive success. Explained by Steven Rose, “Neither their three-dimensional structures nor their lifelines can simply be read off from the one-dimensional strand of DNA” (Rose 1999). As an organism becomes more socially complex, a greater number of environmental factors and societal motives must be taken into consideration.

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Psychologists and anthropologists alike have been fascinated by culture bound syndromes; mental illnesses that are "forms of unusual individual behavior restricted in distribution to discrete areas of the globe" (Simons 1985:43). In the recent past, the uniqueness of these syndromes and their tendency to appear only within certain cultural contexts have raised debates over what causes and perpetuates these behaviors. Some researchers have addressed the problems with labeling these behaviors as deviant, arguing that the criteria for judging culture specific behaviors are rooted in biased, Western ideas of normalcy and that these conditions cannot be understood outside of the culture where they are exhibited (Kleinman and Lewis-Fernandez 1995). For this reason, an alternative way to label these conditions is "culturally interpreted symptoms", focusing on the way that individual cultures create and understand illness (Low 1985). Culturally interpreted symptoms can act as "vehicles for communication" (Karp 1985:222), that use the body as a theater to play out culturally understood messages. In other words, the symptoms are an attempt to express psychological distress through bodily displays, a process known as somatization. Karp comments that "some culture bound syndromes are spectacular forms of indigenous social commentary" (1985:224), using bodily symptoms as an "idiom of distress" (Low 1985), a language that is communicated through the body in an attempt to protest societal conditions.

The tendency to classify culture bound syndromes as conditions that appear in "other" cultures obscures the fact that Western culture is also capable of producing illnesses that are exclusive to occidental society. For example, eating disorders are conditions that until recently, have been observed only in the United States and Western Europe (Miller and Pumariega 2002; Nasser 1997; Reibel 2001). There are three main patterns of disordered eating. Two of these, anorexia nervosa and bulimia nervosa, are listed in the most current volume of the Diagnostic and Statistical Manual (DSM-IV), which is the primary nosology of psychological conditions. The symptoms of anorexia are a
refusal to maintain a normal body weight, an intense fear of gaining weight, distorted body image, and the cessation of the menstrual cycle (Woodside 2002). Bulimia is characterized by recurrent episodes of binge eating followed by a method of purging that can include vomiting, use of laxatives, excessive exercising, and periods of fasting (Woodside 2002). A third pattern of eating that is not yet listed as a psychological illness, but that is increasingly becoming a problem, is overeating that leads to obesity (Gladwell 2000).

While all three of these disorders are increasing in Western culture and abroad, the focus of this paper is anorexia nervosa, which is the most extreme of these conditions. Anorexics follow a pattern of food refusal so rigid that it can lead to death if untreated. Ninety percent of people diagnosed with anorexia are women (Bordo 1993; Chan and Ma 2002; Woodside 2002), which leads me to believe that this condition is a way of communicating deeper lying problems for women in Western culture. This hypothesis is supported by the increasing evidence that the occurrences of eating disorders in women rise as images and values of Western culture are spread throughout the globe, even in cultures that were previously immune to fear of obesity (Becker 1999; Nasser 1997).

In order to understand the causes behind the development of anorexia, I conducted a review of literature on the topic. I examined several recent books and journal articles on the subject, as well as searched Abstracts in Anthropology to see what kind of work has been done on eating disorders within the discipline. After reviewing the current literature on eating disorders, I found that the majority of information has been collected in the fields of Psychology and Psychiatry. Although the current literature available has offers a myriad of intriguing explanations, I believe that Anthropology as a discipline has much to offer on this debate, especially now that these disorders are becoming more common in other cultural contexts. Unlike Psychology, Psychological Anthropology takes into account the relationship between culture, illness, and the individual, which creates a more complete understanding of the condition. Another benefit of the anthropological approach is the ability to view the illness from a holistic perspective, by examining the interrelated effects of cultural systems on the development, interpretation, and treatment of the illness.

Despite the fact that eating disorders are now found in many cultures, the amount of anthropological literature on this topic is limited. I believe that examining the phenomenon of disordered eating from the viewpoint of Psychological Anthropology would greatly enhance the range of knowledge that currently exists. The etiological factors that have been covered in Psychology are
based on correlational research and fail to examine many of the unspoken assumptions of Western culture that could contribute to the development of anorexia or other eating disorders, such as the rules, emotions, and beliefs surrounding food and eating. Because anorexia is characterized by the refusal of food, I believe that it is important to investigate the way that Western culture depicts food in an attempt to understand the messages being communicated through this idiom of distress. In this paper, I will provide a brief history of patterns of disordered eating, discuss the research that has been conducted in the fields of Psychology and Psychiatry, and expand on these ideas by analyzing the implicit food rules within Western culture. I will use food as an allegory for more intangible social problems that women encounter and I will examine the relationships between food and gender in Western culture and the effects of these relationships on the development and proliferation of anorexia. Using this approach, I hope to elucidate the enigma of why this disorder is appearing in non-Western cultures where it was, until recently, virtually unknown.

A History of Disordered Eating

Although eating disorders are often considered to be a modern phenomenon associated with Western culture over the last century, evidence of women with disordered eating patterns dates as far back as ancient Greece, when medical texts referred to a "disease of young women", with symptoms that mainly affected virgins and included the wasting away of the body and the cessation of the menstrual cycle beginning at adolescence (Silverstein and Perluck 1995). The remedy suggested for this disease was marriage, the thought being that once these women lost their virginity; they would be healed. Ritual fasting has appeared in many different cultures of the past. For example, Greeks and Egyptians both practiced periods of fasting (Miller and Pumariega 2001). In ancient Eastern religions, prolonged self-starvation was associated with spiritual power (Bemporad 1997). Even in the Roman Catholic Church, fasting was symbolic of spiritual purity. Rudolph Bell (1985) proposed that more than half the women who were recognized as saints actually displayed symptoms of anorexia nervosa. Because these women could live on such a diminutive amount of food, they were considered miraculous, when in actuality their fasting could have been a means of avoiding marriage (Bell 1985).

In the nineteenth century, the tubercular look came to be associated with a kind of delicate, spiritual beauty and more and more women strove to appear consumptive by losing weight and powdering their faces to be paler. Questions still remain as to how many women diagnosed with tuberculosis actually
were suffering from disordered eating (Nasser 1997). Chlorosis was another name for a condition among women in the nineteenth century. It was characterized by depression, headaches, difficulty breathing, and disordered eating patterns of either eating very little or vomiting after eating (Silverstein and Perlick 1995).

An interesting connection has also been made between anorexia and cases of hysteria that were prevalent in Victorian society in the nineteenth century (Bordo 1993; Nasser 1997). Hysteria was associated with sexually repressive societies and it has been argued that both hysteria and anorexia are psychological reactions to repressive conditions within their respective societies (Bordo 1993; Nasser 1997). Susan Bordo has pointed out that the strict definitions of femininity in Victorian ideals that caused the hysterical behaviors of self-starvation and temporary paralysis are clear to us now simply because we have come to acknowledge that these ideals are outdated and emotionally damaging. Victorian ideals “are deneutralized for us, as our own constructions of gender cannot be, no matter how intellectually committed we may be to a social constructionist view” (Bordo 1993:50). In other words, the advantage of hindsight allows us to now see the relationship between a restrictive ideology and the resulting effects on women’s mental and physical health. I believe that hysteria was a reaction to societal pressure and similarly, syndromes such as anorexia are also embedded in the cultural ideals of their historical period.

**L’Anorexie Hysterique**

The first diagnosed case of the syndrome we now call anorexia nervosa was reported in the second half of the nineteenth century in France by Charles Lesegue, and was originally referred to as *l’anorexie hysterique*, implying early on the assumed similarities between anorexia and hysteria (Nasser 1997; Silverstein & Perlick 1995). These cases continued to appear in Europe, especially in France and England, and it is important to note that early cases were contemporaneous with the period when feminist movements were beginning to gain momentum in both London and Paris and gender roles began to change. Lesegue attributed this new syndrome to the emergence of a larger middle class in Europe (Nasser 1997). Middle class women took great pains to maintain their weight and appearance, mostly in order to distinguish themselves from the lower, working class (Bemporad 1997). The sudden concern with appearance in Europe was also beginning to dominate the thinking of American women. In the early 1920’s, a new version of the ideal American woman was beginning to take hold. This new beauty was typically 5’7” tall and weighed a little over 100 pounds (Silverstein and Perlick 1995). This period also happened to be when women’s roles were beginning to change in the
United States. More women were engaging in academic and professional careers, and the professional woman was expected to have traits that had previously been considered masculine, such as assertiveness and competitiveness. The new woman of the 1920’s was the flapper, who was tall, thin, and essentially sexless, in an attempt to deny the curves and the lack of respect and power associated with femininity (Silverstein and Perlick 1995). The change in aesthetic standards was followed by an immediate increase in weight reduction techniques. The number of cases of extreme dieting rose, and the American Medical Association gathered in 1926 to discuss the problem of women who were striving to reach a standard of beauty that did not come naturally to most of them (Silverstein and Perlick 1995).

The introduction of nutritional information due to advances in thermodynamics in the early twentieth century also had an impact on the trend in weight reduction. With the concept of the calorie now available to the public, women had a new, organized method of monitoring their food intake that was legitimized by science (Austin 1999). At this time, the medical profession introduced weight charts and scales, and doctors began to assign an ideal weight based on age and height and to encourage people to adhere to these standards by using methods of weight control (Austin 1999).

In the 1930’s and 1940’s, these trends of dieting began to decrease in the United States. This has been attributed to the Depression and a shortage of food. Times of food deprivation have historically corresponded with a decrease in the frequency of self-starvation (Bemporad 1997). However, in the 1950’s, eating disorders reappeared and once again became a common and steadily increasing phenomenon in both the United States and Europe. It originally appeared that African-American women and other ethnic minorities were at less risk of developing eating disorders, but that assumption may have been premature. Recent immigrants in particular seem to be the most vulnerable to developing an eating disorder (Miller and Pumariega 2001). Studies have shown that second generation immigrants are the most at risk because they are not as protected by the ethnic identity of their parents and are more concerned with fitting in with their peers (Mujtaba and Furnham 2001).

Anorexia In Non-Western Cultures
Following the United States and Europe, the highest concentrated incidence of eating disorders today occurs in Japan, where the known cases have been rapidly rising since 1978 (Gordon 2001). Anorexia does appear in Asia, but the fear of becoming fat that the DSM-IV lists as an important characteristic of the disorders is not present, especially in Hong Kong and India. Instead,
refusing to eat is explained by a fear of gastrointestinal bloating or a lack of hunger (Lee 2001). Places like Africa were originally expected to be immune to the development of anorexia due to the importance placed on fatness and its relationship to fertility (Nasser 1997). Anorexia and other eating disorders were rare in Africa until recently. Changes in government, economy, and women’s roles combined with rapid urbanization have corresponded with a steady increase in patterns of disordered eating, most notably in South Africa (Szaba 2001). Latin America continued to remain relatively free of eating disorders until the last two decades. The first report of anorexia in South America occurred in Chile in 1982, and other incidences have been reported throughout the 1990’s (Gordon 2001). Eating disorders also appear to be on the rise in Mexico, most notably among university students (Gordon 2001). The current literature clearly shows that eating disorders have been increasing in the last half of the century and spreading to places where they previously did not exist. A variety of hypotheses to explain this increase have been proposed. Most are based on the trend of modernization and the spread of Western cultural models and practices that are rapidly pervading the rest of the world through the media and the global economy. It has become obvious that “where Western civilization goes, eating disorders follow” (Reibel 2001:44). The reasons for this pattern will be discussed through a review of the current literature.

Review of Current Literature
In order to understand the mystery behind the development of anorexia, it is important to place this disorder into the broader framework of a culturally interpreted symptom. An important aspect of socially induced somatization is the tendency for the symptoms to symbolize behavioral norms and beliefs of the culture (Swartz 1985). Women in Western culture choose anorexia as an idiom of distress because it is an extreme version of the culturally accepted practice of dieting. However, the factors that induce some women to take this cultural practice to a dangerous level are not entirely understood. In this literature review, I will examine the interpretations of culturally specific syndromes that are exclusive to women, focusing on anorexia and the cultural contexts through which such syndromes are created and perpetuated.

Culturally Interpreted Symptoms
Like anorexia, several culturally interpreted symptoms are almost entirely exclusive to women. Syndromes such as latah in Southeast Asia, piblotoq in Greenland, imu in northern Japan, hsieh-ping in China, saka in Kenya, and various forms of nerves that appear in Central America all commonly affect women (Hughes and Simons 1985). Setha Low has conducted cross-cultural research on nerves, a condition that affects women in different areas of the
world, but is manifested in similar symptoms, including headaches, loss of appetite, dizziness, fear, disorientation, insomnia, and depression. Low examined nerves in Costa Rica, Newfoundland, and Guatemala and concluded that women showing symptoms of nerves are expressing emotional distress, usually as the result of the death of a loved one, abuse, or problems within the family. She also noted that when women complained of nerves, they were not considered responsible for their symptoms and they received social support through friends and family members (Low 1985). Other explanations for the cause of nerves are the marginal status that is allotted to women in these cultures, economic burdens, and difficulty with migration and acculturation (Davis and Guamaccia 1989). This is obvious in the cases of spirit possession in Madagascar where it is believed that evil spirits, called Njarinintsy, attack young women and cause them to shake, scream uncontrollably, and become confused. Many young girls who are afflicted by the Njarinintsy have recently moved to the city to go to school and are faced with the burdens of living without their families, dealing with the economic and social pressures of being alone at such a young age, and the high rate of teen pregnancy. These girls often come from poorer families and are sent to school with the hopes that with a good education, they will be more likely to succeed. They come from small rural communities and have to learn to adapt to city life. When a girl becomes possessed, she is sent home to her family and taken to a medium with the hope of removing the spirit (Sharp 1990). These examples of nerves and spirit possession indicate that stress, emotional or physical trauma, and acculturation all contribute to the physical symptoms exhibited. Disturbances within the family also appear to be determining factors and social support from the family the most effective treatment. These behaviors have been identified as idioms of distress that reflect the social and familial pressures facing women through the body (Davis and Guamaccia 1989; Low 1985).

Proposed Causes of Anorexia Nervosa
After examining the various culture specific illnesses particular to women, it becomes clear that no single factor can be assigned to the development of these behaviors. Rather, complex blends of conditions are influential. The literature exploring the etiological factors of anorexia, which is largely based in psychological thought, has covered a myriad of possible explanations. Early models were based on Freudian thought, attributing anorexia to a woman’s fear of gaining weight in her hips and breasts, which are symbolic of pregnancy, motherhood, and sexuality. However, modern research has shown that this explanation does not include the impact of combined sociocultural factors and is therefore rather limited (Bordo 1993).
Modernization
Recently, the rise in eating disorders in newly modernized cultures has led to the belief that Westernization is inherently responsible for their occurrence (Becker 1999; Nasser 1997; Reibel 2001). This correlation should be taken with caution if thought to be a sole determinant of all eating disorders. Many intricate factors related to modernization need to be taken into consideration. For example, some researchers have hypothesized that confusion over identity and gender roles causes women to become vulnerable to eating disorders (Bemporad 1997; Nasser 1997; Silverstein and Perlick 1995). Historical evidence on the association between changes in gender roles and eating disorders support this hypothesis. The emergence of modern anorexia was concurrent with the period in Europe when women were fighting to be treated more equally (Bemporad 1997). In the 1920’s, when women in America began to expand into areas that were previously male dominated, extreme dieting and cases of anorexia increased (Silverstein and Perlick 1995). While it may seem contradictory that women who are offered more academic and professional opportunities should be expressing somatic distress, the opportunity for women to take over roles traditionally held for men caused confusion over how a woman should appear and behave. Nasser claims that “the thinness ideal has evolved as the ultimate metaphor, representing old notions of attractiveness, frailty, and fashionibility that women are expected to have and the new values of autonomy, achievement and self control” (1997:1). This difficulty in balancing and maintaining both desired masculine and feminine qualities may cause some women to suffer from cognitive dissonance that may result in development of an eating disorder. Historically, the time periods when opportunities became more available to women have corresponded with the influx of disordered eating (Bemporad 1997). This explanation could shed light on why other cultures are experiencing an increase in eating disorders. Modernization in other cultures and the subsequent changes in women’s roles could be a significant causative factor in the spread of eating disorders.

Obesity and the Role of the Dieting Industry
Another factor tied to the recent increase of anorexia is the stigma attached to obesity in western culture (Austin 1999; Stephens and Paul 1994). Overweight people are stereotyped as lazy, overindulgent, lacking control, and from a lower socioeconomic status (Stephens and Paul 1994). On the other hand, thinness is an indication of success, intelligence, and self-control. This stereotype is evident in advertising. Consumers are more likely to believe a spokesperson that is attractive (Stephens and Paul 1994), and the current ideal for beauty has changed little since the 1920’s. The ideal woman in the United States is 5’7”, 110 lbs. and a size 5 (Nichter 2000). Women who are over-
weight, especially in the areas of hips and breasts, are considered to be less intelligent than thinner, less curvaceous women (Silverstein and Perlick 1995). Ironically, the negative associations with obesity that now exist are juxtaposed against a population that is becoming increasingly heavier. In 1960, 17% of Americans were obese and by 2000, the number of clinically obese adults had risen to 32% of the population (Gladwell 2000). As the global economy grows, more food with greater variety is available and Western culture has become accustomed to an overabundance of foods. With the spread of Western culture, other societies are encountering patterns of diet that differ greatly from their traditional diets and are much less healthy. Where modernization goes, rises in obesity generally follow. Obesity in many cultures used to be associated with fertility, power, and affluence (Nasser 1997), but the global media is now beginning to erode those concepts. Increased access to television has been shown to affect body image ideals. In Fiji, after the introduction of television in 1995, many young girls said they viewed themselves as overweight and began to display patterns of disordered eating, despite the fact that traditionally, the ideal body shape for Fijians has been more rotund (Becker 1999). The rapid transition in preferred body type is hypothesized to be a result of the inundation of images of thin women on the country's only available channel, which broadcasts programs such as *Melrose Place* and *ER*. Anne Becker (1999) notes that many Fijians believe that these television shows represent real life in the United States, and that some young girls use the thin and attractive career women in these programs as role models.

The role of the dieting industry cannot be underestimated in the spread and frequency of eating disorders. The modern diet industry began in the 1940's and has continued to grow (Austin 1999). In the 1990's, the sales of the dieting programs and products exceeded 33 million dollars per year (Stephens and Paul 1994). This surplus of food combined with a strict body ideal and the prevalence and accessibility dieting products, can lead to ambivalent feeling toward food and the body. It is important to note that dieting is an acceptable and often encouraged behavior in Western culture, despite evidence that it is a precursor to anorexia (Swartz 1985).

**Family Conflicts**

As with other types of culture bound syndromes, severe problems within the family can lead to the development of anorexia. Researchers have noted that women whose families have recently immigrated to a modernized country may be at risk for eating disorders, due to issues of racial identity and intergenerational conflicts with traditionally minded parents (Nasser 1997).
Parents who are excessively strict or overprotective can also cause women to feel a lack of control and they may then resort to disordered eating. Fathers who encourage their daughters to lose weight or criticize their appearance, can cause young girls to take dieting to extremes (Bordo 1993). Modernization has changed family patterns as well. Traditionally, when extended families were the norm, there was plenty of social support and other people in the house to protect the children from possible sexual, physical, or mental abuse. As more people move to the cities, the nuclear family is becoming far more common and young girls are losing the kinship support system that could allow them to express distress in a less dangerous manner (Nasser 1997).

All of the etiological factors that have been proposed by psychologists for the development of anorexia reflect the same kinds of pressures that women who suffer from other culture bound syndromes experience. Modernization and all that it encompasses clearly has effects on the physical and mental health of women and conditions such as anorexia are a dialogue expressing these pressures and confictions. However, the difficulty in examining anorexia nervosa as a culturally interpreted symptom is that researchers are limited because they belong to the same culture and therefore are influenced by implicit cultural assumptions, such as food rules and beliefs. In all of the works I reviewed for this literature review, only three mentioned the role of food. None of the works focused on the connection between food, culture, and gender in relationship to anorexia and other eating disorders, which I intend to examine and discuss in the remainder of this paper.

Analysis of Relationship Between Food and Eating Disorders
My review of the literature on anorexia nervosa from the field of Psychology covered a variety of factors influential in the development of the disorder. However, what I found to be lacking was an investigation of the role that food and its cultural meaning plays for women with eating disorders. Psychology characterizes disordered eating as a dysfunctional relationship to food that results from a combination of external societal pressures, but does not provide an in-depth analysis of how Western society portrays food. Far from being a neutral object that is simply consumed or not consumed, food is rich with meaning in every culture. As a discipline, Anthropology is in a unique position to examine eating disorders through the cultural interpretations of food. This approach does not depict such behavior as deviant or abnormal, but rather as a reaction to societal conditions in that, “psychopathologies that develop within a culture... are characteristics of that culture... the crystallization of much that is wrong with it” (Bordo 1993:141). Because eating disorders affect primarily women, these conditions indicate that there are problems
inherent in their role in Western culture. Food can also be used to exhibit problems within a culture. Anthropologist Carole Counihan calls food "an allegory of social concerns, a way in which people give order to the physical, social, and symbolic world around them" (1998, 113). Using this allegorical approach, I will analyze the way that emotions involving food are constructed and reinforced in Western culture, and how disordered eating in women is an indication of less obvious problems within occidental society. I will focus in particular on themes of food in Western culture, the role of the media in perpetuating those themes, and the reenactment of the themes at the level of the family. I will bring together the ideas of several different thinkers who have focused on food as a symbol for more complex problems within a society.

**Food as Symbol**

Symbolic anthropologists have noted that much can be learned about a culture through the interpretation of symbols. Sherry Ortner calls symbols that embody important aspects of a culture "key symbols" (1973). She argues that certain symbols can "provide vehicles for sorting out complex and undifferentiated feelings and ideas, making them comprehensible to oneself, communicable to others, and translatable into orderly action" (Ortner 1973:94).

I believe that food acts as a key symbol and that people and women in particular, can use food to express problems within their families, societies, and ideologies. The fact that Western culture produces relationships to food that are unhealthy and dangerous is indicative of a deeper lying problem within the structure of the society itself. By examining the role of food and the relationship between food and women in Europe and the United States, I hope to expose the messages being communicated through eating disorders and discover why and how these disorders are spreading to other cultures.

**Food and Gender in Western Culture**

Food has different meanings in every culture and is reflective of religious, economic, and political practices. Deconstructing the assumptions behind food beliefs can provide a better understanding of other, more intangible, cultural components. Analyses of such assumptions about foodways, "behaviors and beliefs surrounding the production, distribution, and consumption of food- reveals much about power relations and conceptions of sex and gender, for every coherent social group has its own unique foodways" (Counihan 1998:6). In the United States and Europe, there are obviously many variations of food interpretation based on the numerous ethnicities and subcultures that exist, but some similar themes
prevail. I will discuss four major themes of Western society that are relevant to food beliefs, including the influence of Judeo-Christian ideology, a patriarchal political and economic system, the scientific perspective, and the emphasis on individualism. Using these categories, I hope to show that a study of food reveals how power relations in Western society put women at a disadvantage when it comes to their susceptibility to developing eating disorders.

**Religion**

The first of these themes is the religious influence of the Judeo-Christian tradition, which is a patriarchal ideology that places men as the mediators between humans and God (Counihan 1989). Women are not highly esteemed in the dogma of this religion. Even in the story of Creation, a woman leads to the initial downfall of humanity. In this tradition, women are often portrayed as sexually voracious, tempting men with their lustful desires. The archetypal female is viewed as all consuming and closely linked with nature, which has led to the association between sexual hunger and eating. The cases of hysteria in Victorian society reflect this assumed relationship. When women consumed large amounts of food, especially meat, they were suspected of being overly sexual (Bordo 1993). The connection between sexuality and food in eating disorders cannot be ignored. One of the first results of fasting is the loss of breasts and hips and the cessation of the menstrual cycle. This loss of feminine features can be interpreted as a sign that women are trying to lose their gender identity and become sexless (Silverstein and Perlick 1995).

Another product of Judeo-Christian ideology is an emphasis on dichotomy that includes a tendency to present only two opposite views (Counihan 1989). This ideology, which is hardly universal, requires thinking in binary oppositions such as good food and bad food, fat and thin, healthy or unhealthy. Women that develop eating disorders already tend to be somewhat perfectionistic (Silverstein and Perlick 1995), and this dichotomy only exacerbates that quality, requiring that “food refusal must be total, anything less fails to achieve the desired state of perfection” (Counihan 1989:102). Judeo-Christian ideology also encourages acts of self-control and self-sacrifice. This leads to the idealization of the thin woman as an epitome of self-restraint, and the stigmatization of the obese woman for being out of control (Counihan 1989).

**Economics**

Economic practices are another important aspect in the way a society views food. Western culture has come to label food as a commodity (Counihan 1998). The creation of the global economy has made food easily accessible, regardless of season or growing location. Most food comes
from hundreds of miles away, and when it arrives on the supermarket shelf, the purchaser does not know and often does not care where it originated.

On the other hand, in societies that produce their own food, the final product is the result of hours of intensive labor by the person eating the food or someone in their family (Counihan 1998). The process of growing, processing, and cooking the food by hand creates an intimate connection between the food and the consumer. The intimate relationship with food that occurs when it is produced by hand does not exist between the consumer in Western culture and the food that comes in a brightly wrapped package from the grocery store (Reibel 2001). Detachment from the work that went into the food allows the buyer to be a passive consumer. The ability of a culture to take food for granted is a prerequisite to the development of eating disorders (Reibel 2001). The lack of participation in the cultivation and preparation of food is one reason why I believe that the number of eating disorders is multiplying. As commodity capitalism continues to spread throughout the globe, less people are responsible for the production of their own sustenance, which is a risk factor for the development of eating disorders.

The economic and political structure of Western culture is essentially patriarchal, and little importance is placed on the traditional work of women. Childcare and the preparation of food are almost universally the domain of women, and food is an integral part of women’s identity (Counihan 1998). However, in today’s economy, these feminine skills are considered relatively unimportant and are not well compensated (Nasser 1997, Silverstein and Perllick 1995). Despite advancements in recent decades, women are still depicted as getting the most reward out of feeding and serving others, a role they now combine with a nine to five job (Bordo 1993). The role that men play as receiver and judge of food is a repetition of the patriarchal theme that runs through Western society. This drama plays out every day at the theater of the dinner table, re-establishing the power relations between men and women.

Science

Another theme central to Western culture’s interpretation of food is the scientific perspective. After the introduction of the concept of a calorie, people began to picture food in numbers. This breakdown of food continued as labels such as saturated fat, carbohydrates, and proteins became popular methods of describing food content (Austin 1999). The scientific community is responsible for labeling foods as “good” or “bad” based on the supposed quality of food on health. “Good” foods can include grains, fruits and vegetables, and fish and poultry. “Bad” foods are red meats, animal fat, sugar, junk food, or anything high in fat or cholesterol (Counihan 1992). However, the boundary between “good” and “bad” foods is not constant. The scientific
community is constantly reassessing and redefining what is healthy and not healthy, causing consumers to be wary and distrustful of food (Austin 1999). Most societies have food taboos on certain items, but in Western culture, taboos are not permanent, causing ambiguous feelings toward food. This ambiguity causes problems in trying to plan a culturally acceptable diet.

The scientific perspective in Western culture is also responsible for deciding what is healthy or unhealthy. Concepts of health are culturally interpreted and the prevailing idea of health in Western society is to avoid being overweight. However, the association between extra weight and poor health has been greatly exaggerated (Austin 1999). In many cultures, the ideal for health is to be slightly overweight, in order to be hardy enough to resist disease (Farrales and Chapman 1999).

*Individualism*

The final theme that dominates Western thinking is the emphasis on individualism. Eating was once a process that involved the entire family and that helped to maintain family cohesion. For example, until the last few decades in Sardinia, Italy, women made their own bread by hand. This long process included all of the female adults in the family. While making bread, they would talk and re-establish ties to each other, keeping the family connected through food production. As more and more stores selling ready-made bread opened in Sardinia, the sterile environment of the grocery store replaced the process of bread making with the family. Women who once saw their relatives every day could now go weeks without needing to speak to them, contributing to the gradual breakdown of the extended family. The interdependence of the family unit and the community is being replaced with dependence on the economy and the state, which both have patriarchal overtones (Counihan 1998). I find it difficult to believe that it is a coincidence that the number of eating disorders increase as families lose the cohesion of the extended family unit while modernizing and urbanizing to adapt to a Western political and economic system.⁵

*The Role of the Media*

The themes that occur in Western culture are especially powerful now that media and advertising are inundating people with culturally approved images. Advertisers spend an estimated 199 billion dollars a year and the average person is exposed to as many as 3,000 advertisements per day (Reibel 2001). Advertisements and television commercials enforce cultural standards and norms through images of what is appropriate and what is not, especially in terms of appearance (Bordo 1993). As cultures become exposed to these images in the media, their perceptions of beauty are influenced.
The media also plays an active part in shaping how women perceive their relationship with food. Advertisers are aware of the pressure placed on women to conform to Western standards of beauty and they exploit these pressures by flooding television screens and women's magazines with images of delicious, tantalizing foods that are often placed directly before or after advertisements for dieting products and services. Women's magazines help to re-enforce this conflict. For example, in one issue of McCall's, the cover stories were entitled "Chocolate Heaven: Desserts to Die For" and "Diet Damage Control", indicating that women are going to need advice on losing weight after being exposed to the 20 new recipes for chocolate that the magazine offers (complete with tempting images of cakes and cookies). The women portrayed in these advertisements and articles have a carefree attitude, as if maintaining a perfect figure and eating the food they want could be accomplished simultaneously and with ease. On the contrary, for women "free and easy relations with food are at best a relic of the past" (Bordo 1999: 103). This concept is supported by the fact the 95% of diets end in failure (Reibel 2001). Contradictory images of food intake and food restraint cause women to have ambivalent attitudes toward food. While men are encouraged to eat heartily and often, women are expected to prepare food, but exhibit self-restraint on their own appetites.

Another persistent image in advertising involves women secretly indulging in "bad", but desired foods such as sweets and chocolate. For example, a recent television commercial shows a woman locking the bathroom door, taking a bubble bath, and pulling out a piece of chocolate that she saved until she was alone, smiling mischievously as she eats (Bordo 1993). This image is dangerous because it implies that women should be secretive and alone in their eating, a trait that is also dominant in women with eating disorders.

Media also plays a role in enforcing the cultural standard that men eat and women prepare. Commercials almost always depict food being bought or made by a woman, except on special occasions when it is acceptable for men to be cooking, such as a barbeque (Bordo 1993). Other commercials are directed at the "woman on the go", who works a full time job, but is still responsible for cooking for her family. The items in these commercials are quick and easy to prepare. These repeating themes send the message that it is acceptable and normal for women to work outside of the home and still maintain all duties within the home (Bordo 1993).

**Food and Gender at the Family Level**

The symbolic role of food in Western culture and the reinforcement of
that symbolism in the media are obviously not sufficient to cause women to
develop eating disorders, because only a small percentage of women exposed
to them are affected. I believe that the individual’s relationship with food is
most impacted at the level of the family because “it is primarily through the
family that the values of society are mediated (Silverstein and Perlick
1995:92). It has been argued that women with eating disorders tend to come
from specific family contexts, in which the parents are excessively protective
and have rigid concepts of gender roles (Nasser 1997).

The role played by the mother is of particular importance. The forma-
tion of a young girl’s identity through her primary female role model, her
mother, can be disrupted when she sees the marginalized position that her
mother is allotted by society. The fear of identifying with the mother’s role
“is displaced into food and eating, simply because of the primal association
between mother and food” (Nasser 1997:65). Fathers can also play an instru-
mental part in their daughter’s perception of food and eating. When fathers
encourage their daughters to lose weight, they are reiterating their role as
judge. Since girls with eating disorders already have a weak sense of self and
low self-esteem, this criticism can cause them to go too far in an attempt to
please their fathers. When fathers act as judges and mothers are treated with
little respect, the family acts as a microcosm of the problems in larger society.

This intensification of gender stratification at the family level can
cause young women to refuse to participate in the family by refusing to con-
cede to family eating habits (Chan and Ma 2002). Food is a vehicle of social
reciprocity and the exchange of food symbolizes social relationships. People
eat their meals with those that they love and trust and to withhold food or re-
fuse to accept food is a denial of a relationship and a sign of hostility (Mauss
1924). The fact that women are choosing not to eat food indicates that they
are refusing more than the food itself. They are also refusing to accept the
person who is offering the food and in a larger sense, the social system that is
represented. This is most obvious at the family level. Problems within the
family, stemming from child abuse, the daughter’s inability to identify with
her mother’s marginal position, or the father’s unrealistic expectations can
cause women to deny food in an attempt to express resentment in an accept-
able manner.

**Discussion and Conclusion**

After reviewing food rules and beliefs in Western culture, I have come
to believe that this society’s depiction of food is a contributing factor to the
increasing cases of eating disorders worldwide. Psychologists are reluctant to
admit that this is the case, claiming, “this psychopathology has almost nothing
to do with food or weight” (Nasser 2001:172). On the contrary, the evidence I
have collected shows that the ambivalent attitudes toward food in Western
culture can be interpreted as a precursor to the development of eating disorders.

Examination of food rules also brings to light more obscure problems within a culture and inconsistencies in religious, economic, and political systems. In Western culture, these inconsistencies include a religious tradition that denigrates women's relationship to sex and food, a political and economic system that presents food as a commodity and de-emphasizes women's role in society, a scientific perspective that portrays food in numbers and creates ambiguous boundaries of good and bad foods, and an emphasis on individualism that breaks down social cohesion by taking food production out of the control of the family. These discrepancies are not always obvious to the members of a culture, who are accustomed to them, but an objective examination shows that society, family, and the media all play a part in socializing women to accept an inferior role in Western culture. I believe that women who develop anorexia are refusing food as a form of protest against a society that continues to devalue their skills, intelligence, and emotions. As Western culture continues to replace other cultures throughout the world, eating disorders such as anorexia will only continue to multiply.

After examining the phenomena of eating disorders from the viewpoint of Psychology, I initially felt as though the literature was incomplete. Trained as an anthropologist to use the holistic perspective, it seemed to me to be unwise to try to explain a syndrome of disordered eating without an examination of the role and symbolism of food. My findings supported my hypothesis that the way Western culture depicts food most likely has an effect on patterns of disordered eating. I believe that research should not stop there. Because symptoms of food refusal are spreading to cultures that were immune until recently, the role of anthropologists is becoming even more crucial. There can be no denying that eating disorders are a uniquely Western phenomena, and that exposure to Western culture and values is in large part responsible for the propagation of eating disorders. However, it is important to avoid overly reductionistic explanations for socially cultivated syndromes such as anorexia nervosa. My discontent with psychological theories is not that the hypotheses are flawed, but that they do not provide a comprehensive overview of the relationship between causal factors. An examination of food-ways only unmarks more complex problems for women caused by political, economic, religious, and familial systems. I believe that the interconnections between these social institutions create unbalanced power relations between men and women, that cause women to protest their lack of control and power in a culturally acceptable manner. Food refusal becomes a way to feel powerful and the loss of weight is physical evidence of resistance to the denigrated role women play in Western culture. Until Western culture redefines female
gender roles to create a more equitable environment, women will continue to exhibit symptoms of distress such as anorexia. While food can act as “a medium of exchange, connection, and distinction between men and women . . . food refusal is a denial of relation, and fasting to death is the ultimate rupture of human connection” (Counihan 1998).

Endnotes

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2. Other syndromes have been attributed to the unique conditions of Western culture, including premenstrual syndrome and the A-type personality.

3. Obviously, the other 10% of people suffering from eating disorders are men. I have focused on eating disorders in women because they are the majority, but research is still needed in determining why some men are susceptible to these disorders. For an overview of the current research of men with eating disorders, please see Woodside 2000.

4. It is important to note that although other cultures have participated in ritual fasting, only Western culture has taken fasting to the point of death. Other cultures use fasting combined with a cycle of eating or feasting and are not fasting as a form of social protest (Counihan 1999).

5. While many culturally interpreted symptoms occur primarily in women, there are many that are mostly exclusive to males, such as Wild Man Syndrome. Although I did not have the time to include these syndromes in this paper, I want to point out that men utilize culturally acceptable forms of distress as well (Hughes and Simons 1985).

6. I believe that the loss of cohesion in kinship units is responsible for
many of the problems facing Western culture. I believe that illnesses such as depression are a result of a lack of social support and that many other forms of distress could be alleviated without therapy and medication if a support system existed for the individual.

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Extinct Humans by Ian Tattersall and Jeffrey Schwartz is a complete view of the evolutionary history of genus Homo. The authors lead the reader from the earliest known Bipeds (the precursors to genus Homo) to modern Homo sapiens. Through a fossil record that is composed of jaw fragments and partial crania, the story of human evolution unfolds. We are lead from African origins into the far reaches of Europe and Asia as we encounter such species as *Australopithecus africanus, Homo erectus, and Homo neanderthalensis*. For those who are new to the subject there is an excellent opportunity for an introduction to fundamental ideas about evolution, and for those think they know it all the authors present an excellent representation of the fossil record for further research.

The authors present an introduction to the evolutionary framework that is necessary to understand the material that is presented. Areas such as genetic drift and mutation are explained as well as the traditional history of evolutionary theory such as the work of Charles Darwin. After a brief introduction to the evolutionary and biological factors that separate species, the authors begin an in depth look into the prehistory of hominids. They start by looking at early bipeds. These early specimens look more like apes than humans, but the major distinction that can be made is that they are walking naturally upright. The morphological differences between the species that walk on two feet and those that do not is clearly defined.

A continued examination of the fossil record shows the reader that there are ever increasing cranial capacities throughout history, and that the general morphological traits of the specimens tend to look more and more like modern humans. Of course, along the way there are some genetic dead ends,
species that seem to die out without leading to anything new, but the general point of this book is that each of these hominids is diverging further from the ancestors of what are today apes and they are developing into something that looks more like modern humans. This book contains a great deal of current, well-researched information. The authors are both scientists who have studied the material first hand in order to develop their own opinions and theories regarding the material. Their work does not represent their interpretations of other peoples published work. Too often texts can reflect a misunderstanding of the material by the author. In this collection, however, the material has been well collected and the research that has been recorded represents that of well-informed scientific minds. This is an excellent book for those who study human origins as well as those who have very little background in the subject. The photography in the book provides an excellent comparative history that cannot be found in most texts on the subject. Some of the information in the book does tend to be rather one sided, giving mainly the point of view that the authors themselves adhere to. For this reason, I would recommend further study encompassing more models of human evolution to anyone with greater interest in this area.
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1975 Frances A. Francis, Southern Illinois University at Edwardsville

1976 Sharon D. Sublett, Eastern Washington State College

1977 Pamela J. Dorn, Georgia State University

1978 Linda R. Carnes, Southern Illinois University at Edwardsville

1979 Eileen Van Schaik, Southern Illinois University at Edwardsville

1980 Kathleen A. Hinkle, Ball State University

1981 Sharon D. Dettmer, Ball State University

1982 Pat A. Bartils, Georgia State University

1983 Katherine E. Arnold, Florida Atlantic University

1984 Lisa Cottrell, Georgia State University

1985 Susan R. Loth, Florida Atlantic University

1986 No Award Given

1987 Katherine L. Ferraro, East Carolina University

1988 Evan Peacock, Mississippi State University

1989 Beverly E. Saltzman, Emory University

1990 Nancy M. LeFevre, California State University at Fullerton

1991 Danyelle K. Means, University of South Dakota

1992 Michelle L. Pender, Washington University

1993 Natasha Schull, University of California at Berkeley

1994 Timothy Ritchey, Ball State University
1995 Katherine L. Lederer, University of California at Berkeley

1996 Ashley R. Tupper, College of William and Mary

1997 J. Rebecca Ferguson, College of William and Mary

1998 Nicole Branton, Southern Illinois University, Edwardsville

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2000 Sara J. Rivers, Murray State University

2001 ?

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1994 - Kimberly A. Kaufman, University of Southern Mississippi

1995 - Kathleen Tucker, Murray State University

1996 - Robert Lusteck, Mississippi State University

1997 - Fedra Papavasiljou, University of Texas, San Antonio

1998 - Miss Julie Tarantino, Western Kentucky University

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LAMBDA ALPHA NATIONAL SCHOLARSHIP APPLICATION

The Lambda Alpha National Anthropology Honors Society offers two scholarship awards: (1) the National Scholarship, and (2) the National Dean's List Scholarship.

The National Executive Office will offer a $4000 annual base award for the National Lambda Alpha Scholarship. The National Dean's List scholarship will offer a $1000 award.

The National Lambda Alpha Scholarship is awarded to a graduating senior majoring in Anthropology. The Lambda Alpha National Dean's List Scholarship is awarded to an Anthropology major with junior standing during the 2000-01 academic year.

These are limited and closed competitions. A well qualified candidate has a reasonable chance to win. In order to insure a quality set of candidates, potential applicants will be allowed to join the honorary but must be accepted by their chapter and paid up before the application deadline of March 1, 2001. Each chapter may nominate only one candidate per award.

The chapter of the scholarship candidate for either award must forward the following materials to the National Executive Secretary by the March 1st deadline:

1. Letter of nomination from the department or appropriate academic unit (this letter must specify to which scholarship the candidate is applying).
2. Curriculum vitae
3. Transcripts of all undergraduate grades
4. A statement, signed by applicant, giving permission to the National Executive Council to view submitted manuscripts, and permission to publish the manuscript in the Lambda Alpha Journal.
5. Two supporting letters of recommendation (one must be from a professional Anthropologist).

In addition, candidates for the Lambda Alpha Scholarship award must also submit a statement of future professional plan and an original and six copies of their professional writing (e.g., a publication or course paper). Co-authored publications and contract archaeological reports are not acceptable. The submission should be of "article length". The purpose is to evaluate formal writing skill, not to demonstrate research productivity. Submitted writing exhibits should be accompanied by a disk copy in ASCII text or WORDPERFECT format. If the essay sample of the winning application is not published or copyrighted, the Lambda Alpha Journal reserves the option to publish the material as an article in the upcoming issue.

Mail to:

If notice of receipt of submitted materials is desired, please send them by certified mail or enclose with them a stamped or postal paid self-addressed card. There is often a delay in submission of transcripts sent directly from the university. Candidates are advised to confirm their processing. The winner of the National Lambda Alpha Scholarship will be announced before May 15, 2001. The winner of the Lambda Alpha National Dean's List Award will be announced sometime in October, 2001.