AN INDIGENOUS-LIFE-HISTORY APPROACH: SUPPORTING INFORMED AND INFORMATIVE BIOARCHAEOLOGY

by

Meg Hardie
A Thesis
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Master of Arts
Anthropology

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Date: _____ Spring Semester 2022
George Mason University
Fairfax, VA

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Bachelor of Science
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DEDICATION

I dedicate this thesis to my family, whose belief in me has never wavered, despite my proclivity for self-doubt. My endless gratitude to the friends I have berated with moments of panic, uncertainty, and despair, those who were always there for me with a hug and homemade meal. Words can't express my appreciation and respect for the mentors who have guided me through this process. And to the communities I have the privilege of working alongside in the future, this project represents only the first of many efforts in a career of active healing.

ACKNOWLEDGEMENTS

I thank my family, friends, and past mentors for the unconditional support they have given me in both words and gestures. There are too many names to give, but know that with every step I take forwards, I am reminded of those who kept me from surrendering. I wish also to acknowledge those who have suffered great pains in the history of the field I now make a career within, Ancestors and descendants. Their experiences are what have driven me towards a new path in this profession, and I hope only to contribute to the rights that must proliferate from the scholarship of this discipline. I want to thank Dr. Daniel Temple, Dr. Rick Smith, and Dr. Haagen Klaus not only for serving on my committee, but also for providing me with support, advice, motivation, and opportunities I would never have believed possible two years ago. Your guidance has meant so much in the completion of this project and my professional growth. Special gratitude to Dr. Daniel Temple for reading this entire thesis twice – I warned you, and I'm sorry.

"Far from stifling research, a scientific system that recognizes both Western and Indigenous world views will produce new and exciting information that will benefit all of humankind… We must respect our Ancestors as they are still with us."
Gordon L. Pullar, Kodiak Island Sugpiaq, University of Alaska Fairbanks

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Scholars have employed decolonial theories to transform anthropology as a field and bioarchaeology as a discipline, engaging and co-conspiring with Indigenous scholarship to prevent future harms to marginalized communities. These bioarchaeological projects intentionally unsettle and reassess histories narrated by settler-colonial heteropatriarchal voices, using decolonial genealogies of feminist, queer, and Indigenous theory that critique colonial influences on anthropological methods and interpretations. Bioarchaeological studies of stress, identity, relation, embodiment, and violence are augmented by these frameworks. To coalesce myriad theories and methods, the model of Indigenous-life-history is proposed. This braided approach to bioarchaeology acknowledges anthropology's violent history while performing research within boundaries provided by involved descendant communities. Indigenous-life-history prioritizes respect towards Ancestors and relations through science and repatriation. Through this framework, bioarchaeology can narrate informed histories and contribute to decolonizing legacies through the restitution of Indigenous life and Ancestors.

CHAPTER ONE: ACTIVELY DECOLONIZING ANTHROPOLOGY – LEGACIES AND RESPONSIBILITIES

Anthropological concepts of the "biological" and the "cultural" have been placed in dichotomous frameworks and subdisciplines despite being co-constitutive and co-productive in the experience of human systems. Biocultural approaches to anthropology attempt to bridge the divide forged by scientific compartmentalization of evolutionary or social theory. Multidisciplinary, multidimensional research projects in anthropology have been particularly useful in directives of decolonization. Within productive decolonial anthropology, scholars intentionally counteract colonial-settler paradigms in sociopolitical histories of the past and promote the restitution of Indigenous life and land.

From decolonial intentions, applied and activist anthropologies have emerged to represent an orientation of research that directly addresses contemporary disparities, oppression, and violence inherent to heteropatriarchal, anti-Indigenous settler colonialism. Decolonial activist anthropology is further expanded by the perspectives of marginalized scholars and approaches borne of science and technology studies (STS) that make critical assessments of knowledge production in the landscape of heterotypical patriarchal settler-colonialism. It is through this intention of active, critical research that frameworks for conducting anthropology may be introduced to reorient the practice of the field. The same directive is likewise a primary motivation of this project, which is written in concert with

sustained scholarship and genealogies of decolonization developed within Indigenous studies.

Biocultural Approaches

Within anthropology, a general division between scientific and humanistic approaches has been reinforced by disparate subfields, originating from divisions of research interest and a notion that biology and culture are complementary but separate aspects of the human condition (Gravelee, 2009, Leatherman and Goodman, 2020). This dichotomy, however, is nonrepresentative of the dynamic developmental systems responsible for constructing the multiple axes of human experience or existence that represent a process too expansive to elaborate on within this project. Even as this insular system has undergone critique, contemporary anthropologists still harbor concerns about collapsing such divisions (Lyle and Smith, 2012). For some biological anthropologists, a disinterest in cultural or social theory may be related to misdirected attempts to conduct "objective" science, guided only by rigorous mathematical or biology-based methods. These perspectives have been a focus of sustained critique by feminist and postcolonial STS (Haraway, 1988, Subramaniam, 2016, Smith and Bolnick, 2019). Among cultural anthropologists, a related discomfort towards biologism is often due to the history of biological determinism that has often dominated physical/biological anthropology. Conceptions about culture and race have previously attributed human behavior or social structures to various stages of evolution, rendering models that hierarchized race in

discriminatory ways and classified Black, Brown, and Indigenous peoples as maladapted, less “advanced,” or even sub-human.

The lasting division between categories of “biological” and “cultural” human sciences is thus in part be due to critiques and assumptions about the social beliefs of biological or evolutionary anthropologists. Though these critiques are well-warranted in both the past and present, they come with the nuance that these scientists do not exclusively advance racially-based models (Lyle and Smith, 2012, Leatherman and Hoke, 2016). While deterministic models are not inherent to biological approaches to anthropology, controversy arises from some topics assessed by evolutionary anthropology, such as sex differences in parenting or the evolutionary basis of conflict (Laughlin, 1968, Lee and DeVore, 1969, Slocum, 1975). This issue is exacerbated when research does not take a distinctly socially activist position or attempts to produce an objective viewpoint on human behavioral evolution, a goal that is unachievable as the subjectivity of science is recognized (Harding, 1995). The division between biological and cultural aspects of human life also does not favor integration of theory, methods, or new discoveries in any subfield. Rather, it ossifies the rifts between disparate scholars whose motivations reflect similar interests in human relations with their environment and each other.

Theories of biological determinism are not inherent to biological studies of human adaptation, evolution, or variation (Stojanowski and Buikstra, 2004). In more recent generations of anthropologists, the incorporation of social theory into biological studies has made for a more comprehensive assessment of human evolution and prevented biologically reductive conclusions. While neither genetics nor biological adaptations

determine culture, there are important relationships between the biological and cultural experiences of humans. Developmental systems, both bodily and socially constructed, produce a wide range of generative potentials among humans (Willey, 2016a). Reassessing these systems can help reintegrate concepts of humans as living persons within biological *and* cultural contexts, existing in a landscape of lived experience. Without the bridging of biological perspectives into aspects of human social studies, the dichotomy between biological and cultural studies will persist and prevent more holistic study. Disparate fields of anthropology may be aligned in "biocultural" approaches to better study multidimensional topics (Ingold, 1998, Leatherman and Goodman, 1998, Zuckerman and Martin, 2016, Leatherman and Hoke, 2016). It is within these biocultural cruxes that topics such as growth and development or resilience can be explored in their co-constituted biologisms and social influences.

Efforts to distance biological anthropology from its racially fraught and biologically deterministic past are propelled by critical theory embedded in such biocultural frameworks (Leatherman and Goodman, 1998, 2020, Leatherman and Hoke, 2016). The biocultural paradigm has gained prevalence in this subdiscipline through the scholarship of academic descendants from the Boasian school as well as students following the intellectual legacies of William Montague Cobb, traditions that have concentrated in the last century (Rankin-Hill and Blakey, 1994, Watkins, 2007, Anderson, 2019). Among anthropologists, the biocultural approach is recognized as an exploration of relationships between human biology and culture, though the distinction between biology and culture becomes more blurred and permeable as science and social discourse reassesses any binary

division previously held as distinct or rigid. Many of the earliest scholars who applied biocultural tactics to their science were concerned with how sociopolitical climates and environments influenced the relative health or lived experiences of marginalized groups such as immigrants or minorities. Biocultural approaches were consequently applied to understand the exchange between factors classified as “biological” or “cultural” in nature.

An early advocate for particularism and non-racialized science, anthropologist Franz Boas studied “changes of bodily forms” to demonstrate the plasticity of types in human bodies (Little, 2010). Work conducted by Boas considered the secular changes of populations based on their environment during development, disproving the belief that disparate phenotypic skeletal traits were biologically inherent to certain populations (Boas, 1912, Boas, 1930). His analysis of cranial and proportional data demonstrated the influence of the environment on physical traits and denounced the idea of a fixed program for inherited characteristics, often gestured to in research directed by teleological and orthogenetic lenses. Boas provided examples of plasticity as evidenced by changing cephalic indexes and analysis of variation in migrant populations, confirming that deviation occurred between generations of families as they developed in different environments. Using these observations, Boas asserted that a relationship existed between morphological indexes and biocultural contexts, believing the circumstances of living had a significant effect either equal to or more significant than genetics. He further contended that racial divisions were not represented biologically, documenting the similarity of health in “mixed-race” children of Native American and white parents (Boas, 1894).

Boas, as an anti-eugenicist scientist, influenced anthropology's acceptance of concepts such as population genetics and human plasticity. He conducted pioneering work on human biology using a causality-seeking approach to human variation (Little, 2010). His research contributions also included human development studies, longitudinal research, standards, and principles of growth that were not steeped in the orthogenic ideas of human evolution or variability. Boas founded theories that rejected concepts of fixed race, established models for migration studies, and validated plasticity as a factor of human variability within biological anthropology. Though he did not contribute many students to this subdiscipline in comparison to other scholars who supported race studies, Boas generated numerous frameworks that are still referenced by the biological anthropologists and biocultural projects throughout the anthropological sciences.

William Montague Cobb, the first African American to hold a Ph. D. in biological anthropology, was likewise influential in the field from the 1930s through the 1980s (Blakey and Rankin Hill, 1994, Watkins, 2007). Cobb trained with anthropologists but specialized in anatomy with T. Wingate Todd, integrating these disciplines with other arts and humanities. A prolific writer and frequent publisher, Cobb's research focused on cranio-facial morphology and development to demonstrate racial similarity and how demographics reflect sociocultural context, referred to as "ecological phenomena" (Cobb, 1936, Cobb, 1975, Cobb, 1988, Watkins, 2007). Cobb frequently integrated sociopolitical studies to his models of human plasticity in recognizably biocultural research projects. Furthermore, his studies of health outcomes among disadvantaged Black populations experiencing poverty in America were the first explorations of distinctly biocultural

biological anthropology, contributions he introduced to research literature fifty years before it was codified as one of the discipline's canon frameworks.

Cobb branded a novel conception of physical plasticity to support the claim that ideal developmental environments could prevent adverse outcomes in adult biology (Blakey and Rankin Hill, 1994, Watkins, 2007). Instead of trait hierarchies, Cobb studied variation and "hybridization" and curated the W. Montague Cobb Human Skeletal Collection at Howard University as a data source for further exploration into skeletal manifestations of lived experience. While Cobb falsely conceived of race as biological, a widely held belief at the time, he attributed racial differences to geographical affinity rather than anatomical superiority or cognitive aptitude. He also forged a vocation as one of the first applied anthropologists. During his extensive career, Cobb established an academic identity even more radically anti-racist and activist than Boas. His applied anthropology blended extensive data with social activist theory to bolster civil rights discourse that was counter to race sciences.

In the latter half of the twentieth century, ways of rethinking the relationship between social inequalities and human biology were raised in the discipline with the introduction of models such as developmental origins of health and disease (Barker, 1992, Kowal and Warin, 2018), epigenetics (Thayer and Kuzawa, 2011, Thayer and Non, 2015), historical trauma (Brave Heart, 2011), and embodiment (Gravlee, 2009, Lock, 2015, Krieger, 2018) into anthropological research (Leatherman and Goodman, 2020). In the past three decades, anthropological research has increased its focus on issues of holistic life history and embodiment, demonstrating the reality of social environments and structural

inequalities as they shape relative health outcomes. Situated biologies and biopossibilities (Willey, 2016a, 2016b) as well as epigenetics/epigenomics and population genetics (Thayer and Kuzawa, 2011, Thayer and Non, 2015, Smith, 2021) provide frameworks for understanding the matrix of biology and health within nature, society, power, and history. To fully visualize these models, historical and sociopolitical disciplines provide key insights to human context.

Even with relationships to other social sciences (i.e. sociology, political sciences), biocultural anthropology has not enacted consistent engagement with relevant historical, political-economic, and sociocultural contexts (Hoke and Schell, 2020). Achieving contextualized and critical biocultural approaches poses a problem due to the necessity of multidisciplinary backgrounds, the complexity of biocultural systems, and the atrophy of efforts in methods beyond a theoretical foundation – the application beyond the discourse. Subfield isolation and specialization within anthropology also divorces the backgrounds necessary to address all components of a biocultural thesis, limiting the availability of particular, relevant techniques and precluding interdisciplinary standardization.

Difficulties of biocultural approaches are further exacerbated when the research project involves deep historical populations, often involving the work of bioarchaeologists. Zuckerman and Martin (2016) assert that "successfully operationalizing [biocultural approaches] in ways that are ethnographically or historically accurate and valid and scientifically replicable requires having location- and condition-specific ethnographic, archeological, and/or historical knowledge" (Zuckerman and Martin, 2016, 15). In many circumstances concerning deep historical populations, such information may be

unavailable. Biocultural interactions and dimensions may have been obscured by time or have not yet been recognized by mainstream historians or anthropological scholars, though this knowledge is held by other connected communities. Without circumstantial knowledge, biocultural projects cannot achieve their holistic or contextual goals.

Bioarchaeologists have advanced biocultural models in part to remedy these unaddressed dimensions of human history, especially in the expansion of theoretical diversity and venues of application (Stodder and Palkovich, 2015, Zuckerman and Martin, 2016, Leatherman and Goodman, 2020). Key concepts in these bioarchaeological ventures include the relationships between people in simultaneously physical and social interactions, identity, embodiment and plasticity, and the effects of colonialism and violence on Indigenous communities through Indigenous frameworks such as historical trauma theory. These research interests dually address individual- and population-level experiences. They further exemplify more applied, multidisciplinary paradigms oriented toward addressing practical issues, such as marginalized communities and relative health. Many of these new theoretical and methodological developments have been established by scholars identifying with the communities most impacted by systematic racism and colonialism. In their scholarship, these anthropologists also provide new perspectives on the role of anthropology in colonial systems, seeking to invert a field once employed by colonialism so it may now be used to address its role in producing such harms.

Decolonizing Methodologies

Linda Tuhiwai Smith, a professor of Indigenous education at the University of Waikato in Hamilton, New Zealand and member of the Indigenous Māori Ngāti Awa and Ngāti Porou iwi, first published *Decolonizing Methodologies* in 1999. Within this foundational text, Smith outlined the ways in which scientific research for centuries has advanced the processes of colonial oppression and extraction, remaining a powerful tool of settler-colonial governments to the present day (Denzun et al., 2008). Smith's publication was among the earliest methodological explorations of Indigenous-directed sciences, including anthropology, and their violence against Indigenous peoples. Osteological research was only one stage of harm. "Just knowing that someone measured our 'faculties,' by filling the skulls of our ancestors with millet seeds" Smith expressed, referencing a common twentieth-century practice of craniometrics, "offends our sense of who and what we are" (Smith, 1999, 4). Smith contended that Western (a term often used when referring to settler-colonial) researchers and scholarship claimed to know more about Indigenous life and peoples than the communities themselves, asserting ownership over knowledge systems, identities, and material culture while denying Indigenous people the right to express these experiences or act as stewards of their cultures.

Universities were implicated in the colonial system of dispossession, and anthropology in particular held a primary role (Smith, 1999, Denzun et al., 2008, TallBear, 2014). Among other scientific fields, anthropology divided Indigenous groups from claims to their culture or even humanity, depriving these communities of the ability to establish their own histories or knowledge. From the nineteenth century onwards, processes of

dehumanization were supported by an ideology of "salvage anthropology" that further dispossessed Indigenous peoples of their pasts and presents, rendering them as the artifacts of a "disappearing" way of life. Much as the land and resources taken from Indigenous peoples, Western scientists held this history as property and thus held power over Indigenous narratives and identities. Western anthropological research drew from an "archive" of knowledge and values to the multidimensional system referred to as "the West," comprised of many different traditions of knowledge and moments of history. These projections of Western thought were reified and legitimized by claims to superiority above other knowledge systems identified as Indigenous, most of which were recast as mythology, superstition, or bias (Wolfe, 2006, Seth, 2009, Byrd, 2011). Indigenous knowledge was thus oppressed, commodified, and sometimes even re-presented to the West in its own terms and qualifiers, distorting and essentializing it as a relic of Otherness.

Smith's decolonial analysis visualizes this act of dehumanization as it existed in colonialism and oppression, structured within institutions, language, and politics. In opposition to Western scientific practice, Smith elevated the knowledge production systems of Indigenous methodologies. Guided by cultural precedents, the protocols, values, and actions in these diverse frameworks built on to research models in explicitly reflective, sociocultural ways. This approach was not to be misinterpreted as an opposition to quantitative, intellectual scholarship but was instead a paradigm guiding research towards ethical and respectful science, diversifying ways of producing and sharing knowledge that would benefit the communities who contributed to it. Ethical codes of conduct were crafted to serve a similar purpose as the protocols of Indigenous relations. Respect was central to

ethical conduct and reflected the significance of Indigenous relations as they function to maintain balance and harmony. Indigenous methods, Smith emphasized, were responsible for "reporting back" and "sharing knowledge," an act of reciprocity and feedback approaching complete absence in Western settler-colonial research models.

Indigenous ways of knowing and history also focused on the restitution of the historical narrative from agents of colonialism. In the development of Indigenous methodology and theory, Smith (1999) proposed the act of "decolonizing" research. "Colonization refers to both the formal and informal methods that maintain the subjugation or exploitation of Indigenous Peoples, lands, and resources… Decolonization is the intelligent, calculated, and active resistance to the forces of colonialism that perpetuate [this] subjugation… It is engaged for the ultimate purpose of overturning the colonial structure and realizing Indigenous liberation" (Wilson and Yellow Bird, 2005, 2-5). The practice of decolonizing in any setting is the assessment, deconstruction, and eventual replacement of colonial structures that perpetuate harm on colonized populations. Decolonization in political contexts has led to long processes of acknowledging and expanding the governing sovereignty of Indigenous people. Within intellectual environments such as the academy, decolonizing efforts have inspired the development of academic programs such as Indigenous Studies in response to anthropology's unjustified custody of Indigenous histories and mediator of Indigenous knowledges. These dynamics of the academy were succinctly brought into view by Indigenous scholars, such as Vine Deloria Jr., in their denouncement of extractive anthropological knowledge models (Deloria, 1988).

Indigenous methods, in Smith's (1999) revisioning model, were one act of recovering Indigenous stories, languages, and epistemologies alongside raising "significant questions for Indigenous communities who are not only beginning to fight back against the invasion of their communities by academic, corporate and populist researchers, but to think about, and carry out research, of [their] own concerns" (Smith, 1999, 39). In the careful consideration of decolonized practice, all methodologies, methods, theories, questions, and analytical processes became significant to the effort. Decolonization did not mean a rejection of scientific knowledge production. Rather, it was posed as a new lens of critical reflection that decentralized knowledge-making from settler-colonial traditions to perform research for different purposes.

In this form, decolonization transformed from a decisive act of political sovereignty into a "process involving the bureaucratic, cultural, linguistic and psychological divesting of colonial power" within intellectual environments to recenter Indigenous knowledges (Smith, 1999, 98). The technology, language, and mechanisms of colonialism had shifted slightly to adapt alongside new formulations of power within the same systems of Indigenous dispossession and deprivation of Indigenous life. While Indigenous knowledge systems had become recognized by some, Smith predicted that the control and legitimacy of these knowledges was not yet in the possession of Indigenous people. Transforming institutional practices and research became, in itself, a political activity with an agenda of mobilization, healing, transformation, and self-determination. By embracing decolonizing initiatives, then, Smith believed scholars were producing new versions of their science. This process followed problem-solving or applied, activist motivations. Indigenous

research thus served a variety of purposes for its communities: remembering, indigenizing, intervening, connecting, reframing, protecting, sharing, writing and reading critically all took priority over "salvage." Smith's text, among others in the late 1990s and early 2000s, established a new scholarship within the fields of social and human sciences, one which would lead to the type of decolonial practice now helmed by Indigenous and activist anthropologists.

Further Indigenous scholarship has substantially moved the needle of decolonization past incorporating Indigenous knowledge or voices into institutions (Tuck and Yang, 2012, TallBear, 2014, Gaudry and Lorenz, 2019, Kolopenuk, 2020). A redefining of "decolonizing" scientific knowledge production has become necessary within the institutions, where this term has been used in messy, inactive ways. The act of decolonizing goes beyond that of bioethics or democratization, which are concerned with reducing harm and increasing representation, respectively. These processes add new voices to the science without necessarily changing the problematic dynamics that lay beyond exclusion and continue to reinforce colonial power. Decolonial work is not just about inclusion, merging Indigenous knowledge with other traditions, or sharing information with communities; it requires the development of relationships and investments that transform what science itself can mean and what knowledge is produced (TallBear, 2014). Enacted to this cause, decolonial science brings about a fundamental return and restitution of Indigenous life and land which science (specifically here, biological anthropology) has historically operated to dispossess.

Tuck and Yang (2012) seek to recapitulate what is unsettling about the process of decolonization. Decolonization is not a metaphor or speaking point, and unmotivated adoption of decolonizing discourse within administrations, institutions, and scholarship – represented by phrases such as "decolonize our schools," or use "decolonizing methods" – only achieves the metaphorization of decolonization. Universities and colleges have felt pressured to "indigenize" their programs, but the execution of such an "indigenization" project has varied significantly between institutions. Gaudry and Lorenz (2019) pose that indigenization is a three-part spectrum. "On one end of this continuum, the academy maintains most of its existing structures while assisting Indigenous students, faculty, and staff in succeeding under this normalized order, and on the other end, the university is fundamentally transformed by deep engagement with Indigenous peoples, Indigenous intellectuals, and Indigenous knowledge systems for all who attend" (Gaudry and Lorenz, 2019, 218). The distinctions between these models delineate what is performative, ineffective executions of "decolonizing" academies and what movements enact actual decolonial change. Tuck and Yang (2019) describe them as follows.

Indigenous inclusion policy ultimately expects Indigenous people to bear the burden of change within these systems. Indigenous students, faculty, and staff are expected to adapt to the worldview, teaching, and research frameworks of the settler-colonial academy. Reconciliation indigenization brings about some systematic changes, such as the establishment of Indigenous advisory and/or reconciliation committees. Reconciliation attempts to alter the university's power structure by educating faculty, staff, and students to change how they interact with Indigenous people. Reconciliation cannot, however, be

lost in metaphor or rhetoric. Finally, decolonial indigenization transforms the academy, fundamentally reorienting knowledge production to a system based on different power relations between Indigenous peoples and Canadians. Treaty- and resurgence-based university changes act as the main transformative aspirations in this model. Despite using reconciliatory language, universities often focus predominantly on inclusion rather than decolonial activity (Gaudry and Lorenz, 2019). Indigenous scholars argue in favor of the decolonial agenda, which executes change that does not shift only the optics of academic activity while furthering the burden experienced by Indigenous representatives.

In the American system, both academic and public, settler-colonialism is structured upon a settler-native-slave model, and the metaphorization of decolonization allows settler populations to engage in evasions, or "settler moves to innocence." These moves, including acts to produce a "settler nativism" or "settler adoption" performed by scholars and civilians, attempt to reconcile settler motivations of resource acquisition, complicity, and settler futurity. As Indigenous scholars delineate, "when metaphor invades decolonization, it kills the very possibility of decolonization; it recenters whiteness, it resettles theory, it extends innocence to the settler, it entertains a settler future" (Tuck and Yang, 2012, 3). Though the goals of social justice, critical methodologies, and decentering settler perspectives are beneficial in some ways, their objectives may be incommensurable with actual decolonization.

Indigenous approaches to decolonization promote a necessary impatience with those who aspire to (or vocalize that they do) decolonial work. Decolonization, rather than a metaphor, is the mechanism that functions to repatriate Indigenous land and life. Those

who are willing to engage in true decolonization press for acts which unsettle any "innocence" narrative. To prevent the "ethic of incommensurability" (Tuck and Yang 2012), decolonization aims for what is distinct and what is sovereign for projects of decolonization, specifically in projects of human and civil rights social justice. Ultimately, decolonization challenges the coalescence of social justice endeavors with a diluted decolonization, seeking to produce meaningful alliances and transformations which can be employed to restitute Indigenous life and land.

Applied Activism in Anthropology

Activism in anthropology has a complicated, critiqued lineage within the discipline, as outlined by Mark Anderson's historical exploration *From Boas to Black Power* (2019). This text magnifies and dissects the proto-activist roles of anthropologists from the early to late twentieth century beginning with the progenitor of contemporary American anthropology, Franz Boas. Boas and his students are often portrayed as liberal progressives and even activists, a portraiture that omits the problematic aspects of their research, including practices of "salvage" projects that dispossessed authority from Indigenous groups they interacted with (Byrd, 2017, Anderson, 2019). While Boasian anthropologists exemplified relativism, anti-typology, and anti-essentialist at the time, they did so through the position of privilege and colonial voyeurism.

In the final chapter of *From Boas to Black Power*, Anderson (2019) pivots to identify the earliest agents of progressive, radical activism in anthropology, including notable theorist Diane Lewis. A Black female scholar, Lewis is recognized as instrumental

to anthropological activism, encouraging her contemporaries to dedicate themselves to progressive research rationales through supporting or serving communities whom the field had benefitted from studying over centuries of ethnographic work. Activist anthropology is a recognized subfield in itself, focused on conducting anthropology with and for marginalized peoples. While forms of activist anthropology existed in previous generations, particularly among minority anthropologists, Lewis and her contemporaries catalyzed an organized activist movement in academia. As a scholar of color, Lewis directly confronted concepts of colonialism in anthropological studies, identifying the disconnect and discontent between white liberalist anthropologists and their non-white subjects (Lewis, 1973). This was a direct result of a falsely asserted "objective" and "outsider" perspective, which enabled the anthropologist to practice apathy and inaction when the results of colonialism or oppression were being witnessed through their research (Denzun et al., 2008, Jobson, 2020).

Lewis's career provides a model for the work conducted by an activist anthropology. Her topics of research included gender roles, race, prisons, and HIV among Black Americans. She also sought to expose previously unacknowledged effects of colonialism on anthropology and the stipulation that this relationship be reversed to work on the behalf of the colonized (Anderson, 2019, 183). Lewis's "Anthropology of Colonialism" (1973) was published, addressing what Lewis called "the failure of anthropologists to come to terms with and accept responsibility for the political implications of their work" (Lewis, 1973, 581). This was a direct confrontation of the liberalism that allowed many anthropologists to remain primarily inactive in American

social affairs, even allowing for their contribution to anti-Indigenous legislation through termination policies (Byrd, 2017). Lewis presented a scathing review of American anthropology as it had objectified, abused, and alienated minority and Indigenous peoples through practices of outsider ethnography. As a Black female anthropologist, Lewis witnessed the perpetuation of racism through the traditional, paternalistic observation and theory-making of anthropology, as most frameworks of the discipline had a genealogy related to racial hierarchies, politics, and social relations in America. Even Boasian liberalism still abided by the white-dominant perspective, encouraging racial "tolerance" alongside the assimilation of all minorities into white American culture (Anderson, 2019).

Lewis critiqued the work conducted by her contemporaries. Rather than working alongside people of color to understand their struggles or seek social reform, mid-century liberal theorists simply pontificated on how individual perversion of American ideals had permitted an enduring racism towards minorities, publishing ethnographic works as observers of the Other (Lewis, 1973). Lewis saw anthropology's primarily white academic foundation operating under the same "factors responsible for this reluctance [to radical social reform], such as teaching which ignored applied training and standards... Thus, even the anthropologist who moved into the applied field found his work constrained by his preoccupation with the demands of his professional academic career" rather than a role that made them responsible for the social outcomes of their work with marginalized groups (Lewis, 1973, 584).

Lewis believed anthropology should not "privilege theory construction and professional advancement over the renumeration of knowledge to peoples studied or

assistance to those peoples" (Anderson, 2019, 184). In her critique, anthropologists needed to be held accountable to their past and the necessity for change in the present. Due to the marred history and strained relationships between anthropologists and research populations, a rift prevented scholars from conducting work among groups who experienced sociopolitical oppression. Paradoxically, these were also the communities who might benefit from anthropological research that intentionally exposed systemic violence and racism. As such, Lewis deemed it necessary to develop new approaches, standards, and theories to support decolonial ethnography, namely in the forms of activist anthropology, insider anthropology, and outsider-insider collaboration. Lewis's proposals moved beyond the proto-activism of Boas and the Boasian school, pivoting from the passive and "objective" observer towards engaged activism. Instead, Lewis's vision of effective anthropology encouraged an amplification of "insider" or minority scholars working within, with, and for their own communities, expressed in her essay, "Anthropology of Colonialism" (1973).

Lewis outlined three potential remedies to overcome anthropology's traditionally inactive platform and ways to mobilize as a radically progressive social science, all of which are antidotes now employed by applied, activist scholars. The first component was an applied, activist orientation committed to social transformation. This type of anthropology would recognize, study, and pose resolutions to the kinds of systemic oppression experienced by minorities or lower-status groups within American (by extension, global) settings (Lewis, 1973, Speed, 2006, Hale, 2008). Research could no longer capitalize on studying the cultures of "othered" groups to educate white Americans

and Europeans. Instead, it would take an active role in identifying and resolving problems that were often initiated by white sociopolitical powers. Lewis's second proposition involved the expansion of what she termed "insider" anthropology, or the practice of minority representatives becoming the scholars who could in turn study and support their communities. Lewis's vision entailed insider anthropologists be accountable and commit to the work they did with and for their own community. The insider perspective "led to a different ordering of priorities in anthropology," changing it to an "explicitly activist and involved discipline, one that produced social scientists committed to radical change" (Anderson, 2019, 189).

Finally, the field could still benefit from the work of white anthropologists who committed to the same motivations of radical social reform. Accessible, collaborative anthropology would operate in accordance with the subject community's standards, and academia could employ new types of "perspectivistic" or minority-forged knowledge. Radicalized white scholars would thus communicate the problems and needs dictated by the people who consented to their studies. Lewis recognized the outsider-insider categorization as a spectrum based on attributes of the researcher and assessment by the subject community. In Lewis's vision, both insider and outsider anthropologies had complementary benefits in the field – factors of bias or partial perspective arising from either might be mediated by perspective of the other. For example, the intricacies of a culture or community would be expressed more accurately through the lens of an insider's lived experience; the banalities of life they may not perceive as significant, however, might be documented by an outsider. At all points in activism, Lewis stated, "a theoretical

radicalism requires the collaboration of both insider and outsider and an understanding of both the oppressors and the oppressed" (Lewis, 1973, 600).

Lewis acknowledged the decade of her publication as a pivotal moment for change. There had already been considerable criticism aimed at anthropology by the related but distinct movements of the Black and Red Power activists, each of whom demanded the restitution of ownership over the histories and research involving their cultures. Lewis saw the best way to address this "crisis" in anthropology was to advocate for the same reform necessary in broader society. Addressing the critics of the revisions she posed to academic disciplines, Lewis responded:

> It is because of worldwide exploitation and oppression that a radical, activist social science is needed and is emerging. In these circumstances, should we sit silently and helplessly or attempt to contribute in some way to the revolution of consciousness which is making change possible? To argue that a relevant anthropology is only possible when worldwide inequalities are ended is to ignore the potential and obligation of the social scientist to help bring about the creative changes necessary. (Lewis, 1973, 600)

Subsequently, Lewis compelled the anthropologists of America to educate themselves on activism but also provide knowledge to activists of the communities they had previously studied to promote a more proactive, effective handling of social reform. As evidenced by published responses to "Anthropology of Colonialism" (1973), Lewis's rally to decolonial activism appears to have been well received by most, if with some critique and defense of anthropology's fictitiously "objective" academic purpose. Despite its critics, Lewis, this text, and corroborating scholarship were catalysts to this transition in the discipline. The early recommendations of Lewis and other minority scientists have

since developed into growing forms of insider and applied activist anthropology also adopted by non-Indigenous white scholars (Speed, 2006, Hale, 2008).

This genealogy, augmented with the growing ranks of Indigenous and Black scholars, can be followed to contemporary progressive research, researchers, and radical activist collaborations between whites and marginalized communities, expanded upon in later chapters of this project. Despite a visible increase in social reform work and policies, today's anthropologists must still be conscious of their potential as activists, whether as insiders or outsiders, to prevent idealism from predicating successful social reform. To uphold the legacy of Lewis and other early activists in the discipline, anthropologists claiming progressive research must embrace this liability inherent to their work and commit to active research.

Activist anthropology is expanding in the literature of the twenty-first century, and Lewis appears to have been somewhat of a clairvoyant to the forms it has taken. The discipline reflects her hopes for effective, engaged research with an emphasis on insider scholars and insider-outsider collaboration. Activist anthropology is being integrated with the ideas of socially applied anthropology to effectively benefit the subjects of study and make knowledge accessible. This rehabilitation of the dominant anthropological condition can be better visualized through recent contributions by activist anthropology and the shapes it has embodied through minority-performed and collaborative research. Anything regarded as progress within the discipline has not developed linearly. Rather than entirely new traditions of thought, voices of dissent present and previously oppressed by colonial narratives within and around anthropology have shifted towards the center in the field.

Simonelli's (2007) article "The Active Voice: Narrative in Applied and Activist Anthropology" outlines the qualities of effective activism in the field. To be a true activist, "authors [choose] to document and detail issues and problems that go beyond cultural description," taking "an explicitly active, and not always unbiased role in the lives of those who open their communities to our research… working in advocacy roles with NGOs in communities, attempting to do other issues-based research, or leading student programs" (Simonelli, 2007, 161). Lewis's platform is reflected in Simonelli's list of prerequisites, from the choice of what is studied to the recognition of anthropology as a non-objective science, imbued and liable in its reliance on human agents. Simonelli also denotes the bias inherent to the activist role, claiming it a necessity for anthropologists to empathize with those they work with while investigating systemic social problems. Simonelli extrapolates on the effectiveness of the activist as researcher. As an applied anthropologist, Simonelli herself "strives to support accessible writing, especially in journals that publish the work of nonacademic anthropologists… Texts can neither be jargon filled or excessively interpretive, especially when the production involves the participation of community collaborators" (Simonelli, 2007, 156). As implied by Lewis, anthropological work conducted by and for academics cannot make a considerable impact on the study communities unless conclusions are accessible and understandable in their paradigm of lived experience. The report of all field work must therefore be legible not just to the informed anthropologist but to the layperson whose life is written upon the page.

In an address documented by Hull (2014), Katherine Schultz expands on the functionality of activist anthropology in her annual address to the Council on Anthropology

and Education. Speaking to a congregated group of anthropologists in positions of power to enact radical change, Schultz punctuates the importance of sustained work within a community and its conditional obstacles. Schultz implores that, while taking an active role to confront social problems, the responsible anthropologist must "avoid the mistakes that come with being required to act quickly and to [instead] reap the benefits of sustained engagement over time, including the building of trust and relationships" (Hull, 2014, 231). This practice supports sustainable change rather than short-term or superficial solutions, as seen in earlier Boasian liberalist activities.

For this reason, too, Schultz believes academics need to be confronted with "legacies of structural racism and neglect" so that they may be motivated "not only to observe, analyze, and theorize but to act and to intervene, and to join forces in doing so, with each other and with educators and agencies on the ground" (Hull, 2014, 233). By retrospectively viewing the past employment of anthropology as a tool of violence, activist anthropologists understand the field's role in constructing racial disparities and how its traditions are founded in racist structures. This confrontation obliges anthropologists to consider how they can redirect anthropology, more specifically in anti-racist activism. Schultz also encourages ethnographic "revisits" to "charting the continuities and discontinuities of individuals and institutions in relation to particular interventions," as activism has already had over half a century of intervention in social reform (Hull, 2014, 233). Revisiting the same communities or circumstances demonstrates the effectiveness – or lack thereof – of activist anthropology already enacted there, facilitating a continuation of successful action or a revision of failed attempts.

Decolonial Activism in Anthropology

Among the most effective activists of today, "insider" anthropologists have taken a leading position. Minority involvement in the field has increased since the time of Lewis, as was supported in the commentary dispensed after the 1973 publication of "Anthropology of Colonialism" (Anderson, 2019). Smith (1999) represents one of many Indigenous voices contributing to decolonial activist methodologies. Anthropologists identifying as Indigenous or Native are particularly engaged in this work, as their communities have for so long represented non-consenting subjects of traditional anthropology, ethnography, oppression, and systematic violence in America (Deloria, 1988, Denzun et al., 2008).

Neither Lewis nor Smith singularly catalyzed the tradition of Indigenous anthropology, as active research among Native scholars was conducted decades before her essay reached a larger academic audience. D'Arcy McNickle, a Cree-Metis writer and anthropologist, documented topics of Native culture and history from 1949 until his death in 1977. Ella Deloria was a Yankton Dakota anthropologist and ethnologist who worked with Boas, Benedict, and Mead. She worked on preserving the linguistics and oral history of various Sioux communities through the mid-twentieth century and was compiling a Lakota language book when she died in 1971. Both Native anthropologists exemplified insider activism through historical preservation and stewarding community knowledge that also considered the cultural persecution of Native people.

Although Native anthropologists were already activists in the field, the period between the sixties and eighties ushered in a more receptive era of insider anthropology that opened opportunities in academic realms. This shift often occurred as American Indian

and Red Power movements led scholars into the academy where they created their own departments and represented their own knowledges. Today's activism in "the contemporary anthropology of Indigeneity, rather than being a break with the discipline's past, or even a sharp turn away from it, is in fact a continuation and development of an important tradition within it" (Arndt, 2019, 728). Fifty years after Lewis's publication (1973), more Native anthropologists are producing community-focused research as well as studies on colonial populations, as supported by Smith's (1999) text. An example of such insider anthropology is Tanya Ceja-Zamarripa, a Native scholar whose work in her Mexican community has allowed her access to otherwise private Indigenous medical practices. Ceja-Zamarripa's experience as an insider positioned her to know the immediate concerns of the community (in this circumstance, health disparities). Her Indigenous status, however, does not guarantee Ceja-Zamarripa the intimate knowledge of other community members. In her own experience, "the role of "native" does not shield [one] from tense relationships with 'informants,' the need to conduct valid and ethical research, or the responsibility to protect the community that has entrusted you with cultural treasures" (Ceja-Zamarripa, 2007, 14). Lewis noted this complexity in her essay and subsequent reply to critics. Although an insider is more aware of the context they may be working in, there is no certainty that their citizenship or status as a community member will ascend beyond their identity as academic and observer. This layered identity presents a conflict and tension which, much as that of the outsider anthropologist, must be tentatively negotiated to gain necessary permissions from the community of study.

This duality is not exclusive to Native anthropologists. In a compendium of essays on activist insider practice, Dana-Ain Davis documents her research an African American feminist anthropologist specializing in Black studies of poverty, violence, and reproductive rights. Engaged activist knowledge production, Davis contends, "should unravel issues of power and include interventions that help move toward social justice" regardless of what is required of them elsewhere in the research model (Davis, 2014, 413). The published ethnography, for example, should resonate with perspectives of the subject community rather than the outsider audience (Jobson, 2020). This maintenance of the insider paradigm preserves the reality and authenticity of ethnographic projects, not tailoring it to a palatable or reinterpreted outsider viewpoint. Davis thus concludes the successful insider anthropologist will facilitate "understanding and empathy by viscerally demonstrating the experiences of participants' existence and by refusing to keep private and erase or sanitize how they, in fact, live their lives" (Davis, 2014, 416). As an academic, however, Davis also occupies a somewhat elevated and privileged position compared to those she studies, despite a shared identity as Black and female. Davis's colleague and co-publisher Michael Schuller concedes a similar note to Ceja-Zamarripa in his own essay, recognizing "that perspectives of those most marginalized offer unique and important insights otherwise not possible, but [we are also] all insiders and outsiders at different times, places, and contexts" (Schuller, 2014, 410). This is not a failure of activism but an additive challenge that anthropologists must contend with to justify their involvement in any venue of work.

The paradox of insider activism is related to the last of Lewis's proposals, that of insider-outsider collaboration in activist work. Lewis "ultimately conceded that

perspectival, activist, insider approaches did not, in and of themselves, produce the theoretical and practical foundation for a revitalized and radical anthropology capable of comprehending and intervening in structures of power" (Anderson, 2019, 193). Only 1% of Ph.D.-holding anthropologists could identify as insiders in Native research, and this is with the assumption that they would be identified or welcomed as such by their own community, culture, or sovereign nation of citizenship. A similar problem arises with the relative underrepresentation of Black (4.3%) and Latinx (6.9%) anthropologists compared to their larger presence in the wider American populous (13.3% and 17.8%, respectively) (Anderson, 2019). For this reason, it will not benefit anthropology to rely solely on insider anthropology for the personal, professional, and activist labor within all minority populations. Collaborative anthropology thus becomes a tool for expanding the reach of engaged research.

Again, such work was underway before Lewis's or Smith's publications. Activist anthropology was enacted by both white anthropologists and Native people after WWII, intensifying alongside civil rights motions such as the Red Power Movement. Sol Tax, a white anthropologist and collaborator with Native representatives, established what was termed "action anthropology" in his work with the Fox (Mesquakie) from the late 1940s to early 1960s (Tax, 1975). Action anthropology abandoned the doctrine of scientific "objectivity" and non-interference of earlier social sciences, favoring a system of mutual learning and aid with studied cultures. Tax organized alongside activists within the social sciences and Native communities to draft the "Declaration of Indian Purpose" that would later be central to the Red Power movement. This explicitly activist work is rarely

recognized in the history of anthropology, but it speaks to the longer tradition of activism that existed before Lewis and her contemporaries.

Another activist collaborator, Nancy Oestreich, was a white anthropologist who worked with Indigenous groups in the 1960s. Oestreich worked with Tax, among other notable outsider activists, alongside collaborations with McNickle and "American Indian leaders in struggles for rights and sovereignty in an era when such work was out of sync with the standards of disciplinary recognition" (Arndt, 2019, 1). After a decade testifying on behalf of tribes before the Indian Claims Commission, Oestreich "became a key figure in the debates within anthropology over the need to take a stand against the federal government's" tribal termination policies, which were directly responsible for disenfranchising entire cultures of people from the sparse resources they had been allocated after removal from their traditional homelands (Arndt, 2019, 1). Oestreich's research as an anthropologist took a primarily activist trajectory, and she often collaborated on Indigenous-directed ethnographies to construct a new theory of anthropology. Through studies of disenfranchisement among the Menominee, she "made such politics and Indigenous action central to accounts of American Indian history in Wisconsin that she wrote for general audiences," prioritizing the self-determination and accessibility that both Smith and Lewis would promote later. Oestreich represents "an early attempt to give voice to a vision of Indigenous culture rooted in the sovereignty of Indigenous communities, reflecting their contemporaneity and acknowledging their interdependency—all core commitments of work on Indigeneity in Native North America today" and the same parameters set by Smith's and Lewis's decolonial activist directives (Arndt, 2019, 4).

The tradition of collaboration has continued and intensified since the publication of "Anthropology of Colonialism." Simonelli elaborates on her experience of current applied and activist anthropology by qualifying that, in collaborative work, "the communities we work with are no longer the benign recipients of anthropological scrutiny. We have been asked to give up part of the control of the research endeavor, to learn and document together, to return to them with what we write" (Simonelli, 2007, 157). This type of relationship fosters trust and more accurate data collection for the anthropologist and can guarantee accessibility for the subjects, a result that is rewarding for both parties.

The practice of collaboration requires more communication between groups. At a baseline, the anthropologist must "seek informed permission for projects; carry out work in conjunction with the community; obtain preapproval for written products; and work to find a mode of expression that [is] written for and with the community" (Simonelli, 2007, 156). The writing process of research partnerships, whether they be between insider-outsider researchers or outsiders and community members, entails that the outsider – whatever level of "outside" they may be – put themselves at the will of their subject. While this may appear a vulnerable position for the researcher, it accomplishes Lewis's vision of activist anthropology, in which oppressed groups are given the power to determine what research will be conducted, based on *their* needs for social reform, rather than those delineated by the researcher. This is the spirit of activist and decolonial anthropologies, beyond bioethics or equalizing research relations – conducting research with and for peoples in ways that, by design, drive meaningful change. The best anthropologist, in Schuller's perspective, is one who can "learn from our collective mistakes, to understand

how the system is maintained and can change, and make the most effective use of the life stories, frustrations, injustices, and analyses that people entrust to those of us who are "insiders without" (Schuller, 2014, 412).

Orin Starn, a white anthropologist specializing in Native American social history, has been involved in the applied activist work of repatriation, a major project in Smith's decolonizing model. Starn participated in the return of remains from a well-known Indigenous figure in anthropology, Ishi of the Native Yahi people from present-day California, who lived his final years under the academic scrutiny of Boas' student, Kroeber, and other white scholars. In a 2011 essay reflecting on the "strange marriage" between Native peoples and anthropologists, Starn states "anthropology of Native America has seen something of a rebirth, albeit in ways almost unrecognizable from the days of Boas and Kroeber… [A] predominantly female new generation of Native American scholars is increasingly shaping the anthropology of Native America… navigat[ing] the dilemmas of allegiance and analysis, insiderness and outsiderness, and secrecy and disclosure in ways that both overlap and differ from their non-native colleagues" (Starn, 2011, 184). The new focus on insider anthropology aligns with a move away from "salvage anthropology" towards an engaged, activist position that prevails in North American studies. In addition, "collaborative ethnography and anthropological involvement in repatriating bones and sacred objects; tribal struggles for federal recognition; and language preservation and recovery" have become the primary activities of these anthropologists, a reversal from the coveting of Native remains and materials that occurred through the mid-twentieth century (Starn, 2011, 185).

Expanding the Scope Through Critical Theory

Where does this leave today's field of anthropology in terms of their legacy and responsibility to activism? *From Boas to Black Power* speaks to the shortcomings of some self-proclaimed and later acclaimed activist anthropologists. The Boasian school is full of scholars whose reputations as liberalists are critiqued by Anderson's deep analysis of American nationalism, misdirected solutions, and the white superiority-to-savior complex. Anthropology from the 1920s through the 1970s was imbued with a Euro-American identity and ownership of all human culture, emblematic of neoliberal possessiveness. Even in anti-racist science, racism was still integral to society, academia, and the structure of theories that attempted to dissolve inequality through liberal anthropology. This was in part counteracted by the insider and collaborative activists of the time, but the field was still in "crisis" by the time Lewis' and Smith published their texts. For this reason, current anthropologists operating through decolonial frameworks continue to intervene in the problems of anthropology as did their forebearers who preceded them, with the hope that academic activism will not perpetuate inequality in ways that have reflected settler-colonial agendas. In his conclusion, Anderson hopes change can continue if anthropologists are willing to act with the same agency decolonial scholars have compelled them to, not simply to "assume the inevitable racial progress of their discipline any more than they can assume racial progress in the U.S." (Anderson, 2019, 214).

The adoption of theory science and technology studies (STS) has bolstered the critical work conducted by activist scholars. Archaeological or other Western scientific frameworks has been credited as "objective" – using whiteness as an epistemological *a*

priori – and therefore elevated over what white scientists deem "subjective" assertions of relation, putting further separation between Indigenous people and knowledge production (Dumont, 2020, 253). In the past two decades, STS has directly questioned the frameworks of and claims of objectivity within science, in which scientists and their fields hold privileged access as well as exclusive rights to legitimate productions of knowledge (Subramaniam, 2016). Donna Haraway's "Cyborg Manifesto" (1991) was one major contribution to a tradition of feminist STS activism. Haraway acknowledges an entanglement of science and technology with capitalism, by extension colonialism and militarism, and promotes what she terms "modest witnessing." This practice simultaneously resists systems of domination and seeks opportunities to infiltrate and repossess them as tools for feminist and justice-oriented agendas. Although the history of STS is plagued by many of the issues raised by activist scholars, such as ethnographic distance, STS scholars have more recently sought to bring about genuine change in the sciences they critique, including biological anthropology.

Within the foundations of biological anthropology, knowledge was produced within classist, patriarchal, heterosexist, settler-colonial, and even white supremacist frameworks with corresponding political outcomes (Smith and Bolnick, 2019, Smith, 2021). Founding members of the field were most dedicated to cataloging racial difference or procuring non-white human remains for the same purposes. Recognizing the origins of its knowledge base, biological anthropology must transition from claiming universal objectivity, a falsehood in any science, to accepting responsibility for the sociopolitical and cultural biases inherent to the field, especially in recognizing its contributions to

marginalizing minority groups. STS applications to biological anthropology, as in all knowledge systems, is not to discard all knowledge but to be more precise in the conditions of its production and "strong objectivity" (Harding, 1995, Wylie, 2012) by placing the self in the work (Harding, 1995, Subramaniam, 2016). Future research can better address these problems by diversifying perspectives, elevating non-European systems of knowledge, and conducting research not from an objective "nowhere" but "from somewhere (else)," with the influence of previously "othered" knowledge systems (Smith, 1999, Denzun et al., 2008, Subramaniam, 2016, Smith and Bolnick, 2019).

Feminist postcolonial STS and feminist-queer-Indigenous STS (fqiSTS) studies expand the work of STS to consider and incorporate the specific experiential and knowledge-making locations of women and communities that have experienced colonization as experienced through their standpoints as the Other (Harding, 1995, Subramaniam, 2016). Sexism, racism, and colonialism are highly inter-innervated, and critique benefits from the intersection of feminist, Indigenous, and STS studies. This conglomerate provides a multi-layered practice that considers the multiple loci and matrices of gender, race, and Indigeneity. The feminist and postcolonial approaches of STS (i.e., Jasanoff, 2004, Roy, 2008, Subramaniam, 2016) address social justice in more tangible ways than the social constructionism approach within STS (i.e. Hacking, 1999, Latour, 1979). Central themes within this scholarship include critiques of colonially-derived and applied sciences as they (mis)handle gender, race, and class and Indigenous knowledge as a counter or challenge to colonial-based science. "Postcolonial" STS is

therefore a stage for thinking across feminist, queer, and racial analysis (FQI frameworks) through its focus on colonial systems and decolonization (Subramaniam, 2016).

Within specifically Indigenous STS, Indigeneity is a site of relationally produced knowledge that functions in both scientific and political ways, producing a multiplicity of standpoints and frameworks for the production and understanding of knowledge. Indigenous scholars are in the process of developing frameworks through experiential and traditional knowledge which direct their STS critique towards decolonial praxis (Kolopenuk, 2020, Todd, 2016). Scientific fields and their researchers, bioeconomies, and their consumers employ settler-colonial scientific frameworks to form themselves in opposition to and sometimes as Indigenous peoples. Creating Indigenous theories of the technosciences, however, disrupts extractive colonial ontologies of knowledge and sovereignty (Kolopenuk, 2020, Wilson, 2008). The individual scholar's relations, experiences, and knowledges are integral to the implementation of these disruptive concepts, primarily through the scholarship of Indigenous researchers who can exert their sovereignty through scientific work. Kolopenuk's (2020) methodological project, for example, seeks a coproduction between changes in technoscience correlating with changes in the relationships and biotechnologies in colonial nation-states. Kolopenuk advocates for building relations (not necessarily nationhood) and then knowledge upon relation to move away from settler-colonial knowledge frameworks, instead citing practices of care and working within systems of faith to promote relation-based work (e.g. TallBear).

The continued introduction of new theories and methods, such as those in fqiSTS, is also a catalyst for continuing activism in anthropology. Stagnation and complacency are

threats to decolonial work, arising from idealism for those who live in the privileged purviews of academia. One recent treatise to the Boasian liberalists was critiqued by the greater activist community for its idealist perspective of the American condition. Charles King's *Gods of the Upper Air* (2019) frames a narrative of how anthropology "rediscovered" the underlying unity of all humans, after decades – centuries – of delineating its divisions through race science and the practice of othering. The paradigm shift of the twentieth century, from delineating categorized hierarchies to promoting cultural relativism, was made possible in the discipline by the work of Boasian and biocultural anthropologists. While their practice of cultural relativism did not eliminate bigotry or ethnocentrism, it made a distinct effort to dissolve the racially-driven anthropological perspective of categorization. King credits the Boasian group with accomplishing a humanistic relativism that allows for an almost utopian vision of American life:

> If it is now unremarkable for a gay couple to kiss goodbye on a train platform… for racism to be rejected as both morally bankrupt and self-evidently stupid… if all of these things are not innovations or aspirations but the regular, taken-for-granted way of organizing a society, then we have the ideas championed by the Boas circle to thank for it. (King 2019, 12)

The notion that these are universal improvements upon society in America is blatantly false, as a multitude of people are confronted daily by the opposite of these realities. Further, this narrative credits anthropologists for dismantling the very social conditions they helped create. Forms of prejudice, oppression, and essentialism – particularly in terms of race, sex, and gender – have been untouched by anthropological paradigmatic revolutions, inside and outside of institutional walls. Greer (2018) addresses

the potential of liberal activism when naivety and idealism has halted further progress. He sees this position of inactive satisfaction as one which many of today's progressives seem to be caught, assuaged into stagnancy by symbolic "spells" of reification, corporate triumphalism, and rescue. The most relevant of these myths, in the situation of activist anthropologists, is the reification of social problems challenged by anthropology and the heroic complex of rescuing the oppressed, what Tuck and Yang (2012) refer to as "settler moves to innocence." Providing blanket terminology to systemic issues – "reifying" them – leads to targeting "a manifestation rather than a cause" and "obscures these issues, …[closing] off potential avenues for effective action" (Greer, 2018, 148). Reifications of "racism," "systems," and "colonialism" can be problematic for this reason because they can distract the progressive activist from known points of distress where action can actually incite change. Rather than addressing, say, the lack of proper medical attention for Native women, the activist anthropologist is instead concerned with "disassembling systemic racism" through the writing of theoretical articles, often disconnected from the issue or those who suffer under its tyranny.

In the mythos of rescue, the story of modern anthropology features oppressed communities as the victims in need of rescue, the systems of oppression as the enemy, and activists as the heroic agents of change. The self-identification of the progressive community as a heroic "godform" is then reinforced by confirmatory bias within the academic community. Trapped in a reactive rather than a proactive position, they generically demonize oppression rather than subverting it so the oppressors are on the defense (Greer, 2018). In addition, the vilification of non-activists contributes to

polarization between sometimes hastily defined groups, doing little to foster productive and unified change. These myths are in opposition to the activist model. Anthropologists are meant to seek specific problems with the help of community representatives, not "victims," to challenge the status quo and promote social reform. Generalization and self-idolization are therefore counteractive to the activist role. Greer concludes his letter with optimism for activists who can challenge stagnation in which "activism has become its own reward rather than a means to an end," much as Lewis was hopeful that anthropologists could break with their Boasian liberal past and take a more active role in radical social change (Greer, 2018, 164).

From Boas to Black Power ends on a consolidated look at contemporary anthropology, a discipline still in conversation and conflict with its past. It is also engaged in far more activist work than it may have been if scholars such as Lewis and Smith had not compelled the field towards reform and theoretical transformation. Still, we continue to see the same subjects, debates, and divisions today as existed during the Civil Rights, Black Power, and Red Power movements contemporary with the publication of "Anthropology of Colonialism." For this reason (and many more), anthropology must remain a location of radical social change through active roles of research. A new tradition of engaged, public, and activist anthropology has further ignited the discipline, moving these interventions towards expectation rather than acceptance (Checker, 2014). This vocation within the profession cannot be accomplished solely by scholars also tasked with teaching, administrating, and researching in academia, nor can it be completed by only that who represent minority scholars. Activist anthropology must be undertaken by applied

anthropologists who are participating in field work, humanitarian aid, and other service outside of the ivory tower. Whether the field benefits most from outsiders or insiders is not necessary to debate, for a stronger force can be assembled if all hands are permitted to take up the gauntlet of activist roles. The willingness of anthropologists to embrace both the legacy and liability of activism is instrumental to social reform. We see progress in growing prevalence of Indigenous, Black, and collaborative anthropologies. This is not because equality has been achieved, but because continued, persistent activism is occurring in response to continued, pervasive racism and oppression. "After all, who needs radical, activist social scientists in Utopia?" (Lewis, 1973, 600).

Conclusions

While the social trajectories of traditional biocultural anthropology are not boundless, it does offer a starting point from which anthropologists can do meaningful research. The potential for decolonizing, applied and activist, and critical work intersects in biocultural frameworks that consider the human condition one of both social and environmental factors – the humanistic and scientific – that have politically-charged and experiential influences over human life. It is through a motivation towards active, critical research of this past that this kind of anthropology opens opportunities for new perspectives and multidisciplinary contributions, Nontraditional frameworks for conducting anthropology can reorient the practice of the field, questions asked, and conclusions made. From a theoretical foundation, novel methods can then be developed that will lead not only to a change in the discipline but also our understanding of history, experience, and

relations. Understanding the impact of these outcomes also directs the practice of anthropology towards research that positively benefits groups previously harmed by the same academic institution. Indigenous theory, feminist, and queer paradigms may be applied to inquiries about these communities and Ancestors.

CHAPTER TWO: THE KALEIDOSCOPE OF FEMINIST, QUEER, AND INDIGENOUS THEORY – THE LENSES OF DECOLONIZATION

Beyond its identity as a biocultural science of humankind, anthropology can be defined as the scientific narrative-making of human history, conducted by and for agents of the human present. The act of narrating anthropology has adapted with the implementation of new lenses to promote decolonization practices in a colonially derived discipline. To examine the impact of these integrations, residual colonization in the university and research systems of anthropology must be interrogated. Narrative writing functions as one method of decolonization, seen in the potential of ethnographic formats posed by mid-century anthropologists, but these same ethnographic understandings of narrative are extendable to all purviews of anthropological literature.

Biological anthropology is uniquely capable of narrating both the past and present as contemporary scholars apply decolonizing theories to embodied forms of human history. The lenses cited for this practice include the feminist, queer, and Indigenous theoretical frameworks. These theoretical axes also operate through approaches that follow a history of intersectionality, particularly the Indigenous feminist and the queer Indigenous perspectives. When this kaleidoscope of lenses is applied to anthropology, the discipline produces a more decolonized, informed, and accurate anthropological narrative of the human past as represented by scholarly interpretations of the living or dead.

Anthropology and the Colonial Form

In the American system, decolonization movements in science and academia developed in the mid-twentieth century to reorient the institutions of Western thought that contributed to colonial oppression. Western science grew within colonialism, and the discipline of anthropology was no exception. Pursuits such as race science, anthropometry, and craniometry contributed to racialized typologies and subjugation. These studies emphasized physical difference and "othering" that promoted hierarchization, objectification, and dehumanization by colonizing the non-European body or culture. Science, as a tool of colonial knowledge, was held out of the grasp of women, non-heteronormative people, and Indigenous communities globally until the last century (Seth, 2009). Certain knowledge (white, settler-colonial, male, heterosexual) was elevated and exclusive within sciences. Anthropological research in this era led to dichotomizing analyses, constructing "us" and "them" categories. Binary systems of thought such as male-female or white-other were also constructed without consideration for variation or spectrums of identity and experience. Through self-proclaimed objectivity, the discipline tended to reduce humans into objects, and anthropology worked as a tool of colonization through the scientific objectification of the marginalized, the non-Western, and the "Other" (Gareau, 2003).

A later hybridization of knowledge developed as new perspectives infiltrated the system. Work by Diane Lewis (1973) is recognized as instrumental to decolonized anthropology, and she encouraged her contemporaries to diversify the field through the inclusion of minority anthropologists. As a woman of color, Lewis confronted colonialism

in anthropological studies and identified the disconnect and discontent between white liberalist anthropologists and their non-white subjects. “Objective” and “outsider” approaches enabled anthropologists to practice Othering in a science that inevitably harmed marginalized groups. Lewis believed anthropology should not privilege theory construction directed by a singular white, Western perspective. Instead, her vision of effective anthropology involved “insider,” minority scholars working within, with, and for their own communities (Lewis, 1973). This premise can be followed to the progressive research and practicing researchers in anthropology, from growing ranks of feminist and queer scholars to collaborations with Indigenous communities.

Increased representation within anthropology has provided crucial power to broadening the scope of perspectives and research topics in the field. Groups historically marginalized groups in American society and the scientific community have increased not just population visibility within anthropology but have begun to transform the field into a more salient tool for understanding the human condition. Communities better represented in recent decades of decolonial anthropology include non-male, queer, and Indigenous peoples, who bring with them experiences and perspectives outside the purview of traditional (patriarchal, cis-heterosexual, European colonial) anthropology. In a profession always seeking new knowledge, the addition of new voices is a primary way to access novel and vital understandings. The increased involvement of these scientists has introduced unique questions, theories, research designs, approaches, insights, and interpretations to anthropology. Minority perspectives also expand the impact of anthropological work.

Decolonization is an ongoing project to displace a Western exclusivity in science. The past four decades have witnessed the inception and evolution of a "decolonizing generation" of scholars in a Renaissance of non-traditional work. Decolonization acts as an "opening" rather than a "closing off" as new perspectives bear new knowledge. In anthropology, "the decolonial intellectual seeks to expose the partiality of an anthropology that masquerades as objective science while employing its methods of study and analysis toward an ever more robust consideration of our social world" (Allen and Jobson, 2016, 132). Postcolonial scholars – including those not considered "insiders" or minorities – are increasingly applying theories that have been excluded in the mainstream of science, such as feminist, queer, and Indigenous perspectives. While these lenses are not monolithic, internally-homogenous, or entirely reconcilable, they all benefit an interplay with decolonial thought (Seth, 2009).

Anthropology is distinctively suited to draw from multiple perspectives to achieve its critical theory and grow upon previous misdirection. With the strength of minority scholars, new motivations direct new theories and methods. Incentives for change, the recognition of dominant social realities, and an ability to shift to marginalized viewpoints support minority anthropologists who actively deconstruct and re-operationalize the dominant perspective (Sandoval, 2000). These mediators of experience construct narratives about the "subjects" – people – explored through anthropology. They do work for communities, living and dead. Specifically in the work of bioarchaeology, "this applies as much to the recording of memorials in graveyard surveys and digging in close consultation with communities for a range of aims and motivations" (Giles and Williams,

2016, 12). Anthropologists, just as creative writers, transform the past through their fieldwork and publications. Writing the anthropological past is a task of creativity to uncover human history, and myriad narrative voices speak within the pages when feminist, queer, and Indigenous lenses are involved in their composition (Kirk, 2016).

The Narrative Mode

The narrative mode is, inherently, a work of creativity on part of the author – in this case an anthropologist. Narrative within scientific literature "is not to say that empirical data is set aside and that our narratives are pure fiction that does not seek to draw upon the materiality of the past" (Kirk, 2016, 404). Rather, narratives are constructed from data and evidence drawn directly from observation, analysis, or experience. The function of narratives in an anthropological institution are illustrated by ethnographic theory.

Geertz (1973) characterizes ethnography as "thick description," which is a multifaceted, complexly layered product engendered to mimic the same intricate construction of any community history it documents. Traditional outsider ethnography – and arguably most of anthropology – is either second- or third-order interpretation, because community members are the first-person narrators of their culture (Geertz, 1973). Ethnography is thus an "inscription," rather than a collection of data, to be studied. All anthropologists take the role of a writer, an author of stories that is not untrue or imagined but is also not "reality" in terms of an un-erred textual representation of lived experience (Geertz, 1973). Even in first-person narratives, the role of subjectivity (undeniable in human authorship or sciences) makes most if not all writing "fiction." From a literary view,

ethnography is essentially nonfiction, a creative form not necessarily as factual as the name may imply. Most nonfiction writers recognize they are always three letters away from being fiction writers (and many authors are both). Nonfiction is seeking a "truth" that may never be obtained due to innate human bias. Without recognizing the bias of all narrative knowledge-making, anthropologists fall into the same failed objectivity argument that has inaccurately exalted science as infallible and othered its marginalized subjects for centuries.

The narrative form is further denoted in Clifford's (1986) "Writing Culture: The Poetics and Politics of Ethnography," which reinterprets ethnography as literature in the sense of its artfulness rather than aesthetic. Clifford argues that what is "real" in ethnographic documentation is temporarily established, up for debate, and open to experimentation. He agrees ethnography is akin to nonfiction, which is creative, inventive, and subjective to the interpretations of author and reader while still trying to convey truths in their partiality. The writer, subject, and audience all have influence over the interpretation of "reality" and history. Such research also exists within power relations between the ethnographer's and subjects' social, historical, and political circumstances. Clifford asserts "the poetic and political are inseparable, that science is in, not above, historical and linguistic processes" and ethnography is a "constructed, artificial nature of cultural accounts" (Clifford, 1986, 564). In ethnography influenced by colonialism, the ethnographer cannot be the singular source of authority, and they must recognize the organic and living nature of the communities they interpret. Furthermore, the ethnographic "eye" and "ear" of observation and transcription are viewed as subjective filters through

which a subject is portrayed. This conceptual shift leads to a trend of reflexive, first-person accounts of experience, substituting the traditional "objective observer" perspective. "Speaking back" in discourse-narrative form also offers narrative agency to communities previously viewed as "subjects" (Clifford, 1986).

Abu-Lughod's (1991) "Writing Against Culture," a strong critique of Clifford, argues that the traditional ethnographic writings of culture enforce Otherness as a tool of hierarchy-building. Anthropological writing practices must distinctly write "against" culture through particular and humanist approaches to documentation. There are special opportunities for new perspectives in this form of ethnography, particularly for feminist, non-Western, and Indigenous writers. These groups transition from "Others" into narrative authorities using the unique qualities of their experiences and identities. Their perspectives have a strained positionality in the composition of anthropological work. Authors are often characterized by dualistic roles as observer and participant, holding with them multiple accountabilities to the discipline, the audience, and their own identity or community. Abu-Lughod offers new solutions to writing "against" culture: discussing anthropological discourse, exploring connections rather than separations, and situationally specific research that culminates in more humanist writings (Abu-Lughod, 1991).

In writing their narratives, then, anthropologists approach broad interpretations through particular details, as one might address a central theme through a singular story. This mode of analysis necessitates qualitative evidence and emphasizes meaning. Studying humanity in this qualitative way precludes the development of any "General Theory of Human Interpretation" with universal application or the capacity to be predictive. Instead,

theories can only be adopted from previous projects if they involve similar circumstances and symbols. Contemporary to Geertz, anthropology became more concerned with such symbolic forms of meaning, exploring patterns across humankind via certain moments, places, or peoples. Geertz advocates for ethnographers to avoid the advancement of any singular theory's precision, detail, or depth, as this reduces its functionality and accuracy. He also asserts that objectivity is not achievable in anthropology and that the field is not meant to answer questions. Instead, producing ethnographic work is to compile pluralistic, alternative answers, not to tell "The Story of Humankind" but rather "The Stories of Humankind."

While the referenced authors focus on ethnography, their theories have broader applicability. Anthropology as a wider discipline is an open, collaborative storytelling practice, and to conduct it is to create narratives about the past within the present. Stories are then presented to professional and public forums through writings or exhibitions (Joyce, 2002). The narrative in anthropology "matters because when we tell our accounts, our stories, we are constituting and bringing into existence relations between ourselves as narrative producers and the very peoples about whom and to whom we are talking." (Conkey, 2005, 29). The role of language and writing are gates to knowledge, and their regulation by colonial systems has undergone decades of critique. Language is central to the construction of Western science and European colonization of the globe. Stories were used to uphold the colonial language, voice, and narrative, especially within scientific scholarship. A collective turn to reflexivity on the anthropological narrative has already begun, and writing from different perspectives has promoted the recovery of narrative

multiplicity (Conkey, 2005). At the crossroads of reflexive critique and novel creation are those of women, queer people, and Indigenous communities.

The Feminist Lens

Feminist theory occupies a long, complex history within anthropology that somewhat precludes any cohesive or relevant summation (Gellar and Stockett, 2006). In science more generally, feminist practice allows female scientists to exert power over knowledge that has been historically directed and occupied by masculine, male, patriarchal voices. Feminism has had a crucial role in changing science, inviting women to enter institutions and exposing gender biases in the language and paradigms constructed by male scientists. Feminist science changes the production and modes of scientific exploration, research agendas, and impacts (Conkey, 2005, Roy, 2008, TallBear, 2014).

Feminist thought attempted to address the need to simultaneously render radical practice and meaning making while also committing to truthful accounts of history. Critical feminist formulations were proposed in part as a successor to the "objective," "relativist," and otherwise "irresponsible" tradition of masculinist Western science (Gellar and Stockett, 2006, Wylie, 2012). As a theoretical successor, feminist science was necessitated by an expanded understanding of knowledge as being multidimensional, built from many situated, partial truths. All perspectives actively perceive the natural world and consequently build translations from these specific ways of viewing history. As such, the nearest to "objective" vision is that of a specific and detailed but "partial" view. Understanding how standpoint interpretation operates in technical and social frameworks

can therefore embody a "feminist objectivity." These particularized visions are multidimensional (intersectional) and representative of community vision rather than individual. "Feminist objectivity makes room for surprises and ironies at the heart of all knowledge production; we are not in charge of the world" and in many ways must interact with it while it acts as trickster, a mischievous and chaotic force (Haraway, 1988, 594). Feminist thought within natural, social, and human sciences such as anthropology "need[s] the power of modern critical theories of how meanings and bodies get made… in order to build meanings and bodies that have a chance for life," embodied in what is known as "situated knowledges" (Haraway, 1988, 580). Specifically, situated knowledge positions feminist scientist to engage in a type of knowledge production in which they are intimately connected and politically involved (Roy, 2008).

A feminist theoretical framework encourages the asking of new questions about women and their vital contributions to the anthropological past. Feminist scientists perform science within different frameworks for knowledge-making than do scientists performing traditional male and masculinist science, leading to a set of different questions within feminist practice. Roy suggests that "an effort must be made to articulate concrete strategies as to how [the feminist scientist] can overcome her dilemmas and go about 'asking different questions'" (Roy, 2008, 136). Feminist uses of standpoint theory, strong objectivity, situated knowledges, agential realism, and "the methodology of the oppressed" expand into feminist research agendas and the practice of science. Changes manifest in differential choices made in research models, the democratics or dynamics of the scientific space, the meaning (semiotics) made from scientific exploration, deconstructive work, and

meta-ideologizing (Roy, 2008). Epistemic insights include reformulations of knowing, recognizing that "systematic patterns of social differentiations, and the social identities based on them, cannot be presumed to be epistemically irrelevant" (Wylie, 2012, 62). Inverted perspectives also provide reframed, differential epistemic advantages to research rather than automatically privileging certain types of knowledge. The purpose of standpoint theory, for example, operates in "two senses - in analysis of the effects of situated knowledge and of a reflexive standpoint on knowledge produced" (Wylie, 2012, 64).

Women still face issues of sexism, exclusionary obstacles, and gender disparities within institutions. Furthermore, other scholars react with unease to the destabilization and reconstruction efforts of feminist anthropology (Geller, 2009). The feminist perspective can confront both research models and environments within natural and social sciences, including anthropology. Today's feminist anthropologist thus recognizes the ideologies of patriarchal colonialism in the discipline and can use the same framework to challenge the discipline through their own practice. This allows the anthropologist to express a differential vision through the work they conduct.

Feminist anthropology has a wealth of exemplary work. Most practicing anthropologists have encountered the debate around "Man the Hunter," a theory on the evolution of humankind from ancestral species. This model conceives of hunting and resource provisioning – exclusively male-conducted – as the catalyst for human evolution. In this construction, female human ancestors were relegated to simply propagating the species, assumedly tucked away in a cave or nest while their male counterparts adapt and evolve into higher beings, carrying the intellect of the species along with them. Strong

debate was raised against this model by feminist anthropologist Sally Slocum (1975) in her "Woman the Gatherer" counterargument.

Slocum opened her feminist reassessment of the human evolutionary process with a crucial statement about anthropology: "We choose to ask certain questions, and not others" (Slocum, 1975, 338). This assertion can be read in two equally relevant ways – one, anthropologists choose to ask *some* questions, *not* other questions, and two, they choose to ask *questions* rather than asking *people*. At the time, these were commonalities in the research practice of anthropologists. The questions asked are always determined by the anthropologist who has decided to engage in some form of human-based exploration. At the helm of this process is the rejection of or ignorance to alternate questions. The chosen query is thus influenced by this individual, their cultural background, and their temporal context. By extension, what questions are asked in a field are determined by the predisposition of the practitioners. What exploration will be accomplished by a discipline is therefore the result of who occupies its institutions. As Slocum stated, "the basis of any discipline is not the answers it gets, but the questions it asks," which are chosen by the agents present and propagate the narratives the discipline produces (Slocum, 1975, 344).

The factors that predetermine certain choices made by a scientist can be referred to as "bias." Slocum offered a critique of biases in anthropology, a field established and long dominated by comfortably wealthy white, Euro-American men. The bias of identity and experience is even reflected in the synonymous treatment of the word "man" to "human" in many texts, conflating humankind to the activity and evolution of biological males. This is not a harmless problem of semantics. Slocum recognized that "learning to be an

anthropologist has involved learning to think from a male perspective… But political consciousness, whether among women, [Black communities], American Indians, or any other groups, leads to reexaminations and reevaluation of taken-for-granted assumptions" (Slocum, 1975, 344).

Anthropology's paradigms shifted from singular white heteropatriarchal voices with the introduction of scholars with different backgrounds and perspectives (Smith et al., 2019). As a representative of the less predominant female perspective, Slocum addressed early human behavior and evolution from a viewpoint not biased by androcentricity, therefore less inclined to identify male activity as the impetus for the evolution of humanity. Her postulations discredited the masculinist theory of hunting as the exclusive adaptive path to modern human intelligence, considering instead the female sex's contribution to humankind's development. Slocum created a counter-model to the male perspective in which hominid females also provisioned through gathering and mother-child bonds. While this convincing alternative was shaped by her own biases and perspectives, Slocum provided a new feminist narrative for the evolution of the human species without excluding other perspectives for the benefit of her model (Slocum, 1975).

Waves of feminism have made more progressive and sometimes self-critical arguments. Diversity in the halls of anthropology departments opens avenues for new questions and perspectives, and feminist approaches also address sociopolitical systems that also involve sex and gender. Third-wave feminism acknowledges that early and predominant feminism has privileged women of white, upper- or middle-class industrialized backgrounds (Gellar and Stockett, 2006). The feminist goals of Western

scientists are often not aligned with those of feminists from other localities. Without considering the intersectional experiences of women in impoverished or marginalized socioeconomic positions, feminist science does a disservice to many (Bolles, 2013, Conkey, 2005).

In some cases, the supplantation of Western feminism can even have adverse consequences on the women of non-Western communities. Critiques offered by Black feminists are invaluable to furthering the work of anthropological narratives (McClaurin, 2001, Gellar and Stockett, 2006, Watkins, 2020). A relevant example is work by Oyeronke Oyewùmí, a Nigerian ethnographer who documents the "invention" of women within Yoruban society after colonization. Sex assignment and gender-formation are culture-bound, and Oyewùmí argues that "feminism" and the "feminine" differ between groups. Western feminism, which hinges on European hierarchical structures and biologically determinant definitions of "woman," differs from what might compose feminism in other cultures. Oyewùmí follows the creation of the Western "woman" category in African cultures where it did not exist before, engendered by the external assignment of European scholarship (Oyewùmí, 1997). Narratives of sex and gender, then, can obscure the historical dynamics of these identities, and more particular feminist lenses are necessary to retrieve them.

Scrutinizing sex and gender themselves is essential to feminist anthropological explorations. "The idea of cultural construction [has] rested on the notion that sex and gender could be carefully distinguished, the one referring to biology, the other to culture." (Scott, 2016, 7). Recent discourse has challenged even this notion. Sex is in some ways

also socially determined, as the presence of intersex people and variation in biological sex characteristics or genes differs even between the normalized categories of "male" and "female." Biological sex categories have not always been regarded as fixed and binary, and second wave feminism's dualistic and static notion of biological sex versus cultural gender has been replaced with definitions of both sex and gender as culturally contingent (Gilchrist, 2004). Co-constituted sex and gender as well as non-binary identities are explored within feminist approaches to human genetics and biological anthropology where they were once denoted as outliers in the human biological story.

Ideas about sex and gender change, as do the experiences of those perceived and identifying as women. They "vary in time and by class, ethnicity, culture, religion and geography" and in how they are narrated (Scott, 2016, 10). Modern age and gender stereotypes are socially constructed and inappropriate for universal application to the past and present (Gilchrist, 2004). In the same way, feminism must be more flexible to account for this ungraspable fluidity of identity and experience in the anthropological narrative, and third-wave practices have tried to accommodate the malleable categories of sex and gender.

Contemporary third-wave feminist anthropologist authors perceive gender as intersectional with age, sexuality, ethnicity, and class among other facts (Geller, 2009). The concept of intersectionality is derived from foundational work by Black feminists who vocalized the multidimensional experience of race and gender (Crenshaw, 1989, Alexander-Floyd, 2012, Davis, 1981, duCille, 1996). Black feminists were indispensable developers of this framework, and the term should not be separated from this history. Theory derived from intersectional feminism is capable of unearthing deeper

understandings of identity and lived experience through perspectives on differentiation and decolonization. New attention to social differences, gender fluidity, and performative contexts have been augmented to feminist approaches. Materiality and the examination of bodies, spaces, and artifacts contribute to the literature of archaeological and biological anthropologies.

Identity politics are considered within third-wave feminism as it has integrated queer theory, capturing individual complexity in biocultural studies. In form or framework, the concept of "identity" is not a framework universal to all cultures, but the term can function as a placeholder to define the individual personae and traits that are incorporated into aspects of selfhood, community recognition, and lived experience. Western feminist approaches must monitor their practice for certain flaws (i.e., binarism or reductionist tendencies) when considering identity in communities outside of their own. When performed to its full capacity, feminist studies of layered gender identity "exposes significant shortcomings in mainstream archaeology, not the least of which are the subtle institutional practices and ideological beliefs that have marginalized the topic" (Geller, 2009, 73). Inattention to feminist scholarship in the anthropology of gender makes work on gender deficient in studying the past.

In bioarchaeology, osteological assessments of sex and gender have their own complex relationship to feminist perspectives (Holliman, 2006, 2011, Sofaer, 2006, MacIntosh et al., 2017). Feminist notions of identity and the biological concept of plasticity are both essential to analyzing sex as a biological and cultural process over the life course. Assumptions about the immutability and stability of sex are biologically unstable

themselves. An individual's sex and gender can change over time, whether these be primarily biological or cultural transformations, and there are many different factors in the development and continuity of either sex or gender. These natural complications problematize bioarchaelogy's binary analysis of sex as it is expressed skeletally, even as these approaches attempt to uncover relationships between sex or gender and experience. Rather, a continuous spectrum may be more useful in assessing sex, representing a bimodal but not binary model within human populations.

There are related sources of contention, such as misled comparisons of sexed skeletal individuals and gendered artifacts, conflations of the cultural construction of sex with gender, and the critique of sex assessment processes in anthropology. Feminist approaches recognize that life history and embodiment can change the body over time, and sex and gender have relative flexibility in their expression in the body (Gellar and Stockett, 2006). New insight can also be made through the recognition of trans and intersex identities, though there are not yet standards to assess these circumstances. The assessment of sex, while a valuable reference for the materiality of sex and its influence on lived experience, should not preclude other critical examinations. Bioarchaeology conducted in relation to sex and gender explore such topics as nonbinary genders, mortuary analysis, divisions of labor, body modification, health, and violence. Some of these studies demonstrate that the preconceptions of women in the past are inaccurate as based on androcentric or traditional Western perspectives. Important new approaches to sex and gender include identity and life course that continue to uncover the complexities of lived

experience. Further deliberation about gender and sexuality, two major topics of feminist anthropology, are conducted within the queer lens.

The Queer Lens

It is difficult to divide discussions of sex, gender, and sexuality, which have an enduring association and distinctiveness that prevents them from fusing. Much the same can be said for feminist and queer theories, the latter of which deal primarily with gender and sexuality. Early gender and sexuality studies in anthropology fixated on voyeuristically viewing the male-female binary in other societies. This intrigue related to the taboos of sexuality and sexual practices. Fifty years after Mead's speculations in Samoa, feminist and queer theories have formed mutualistic relationships to expound on embodiment, performance, transgender and nonbinary identities, gender and sexual fluidity, and human rights.

A recent symposium, "How Academic Diversity Is Transforming Scientific Knowledge in Biological Anthropology" (2019), compiled essays from many progressive anthropologists, including those conducting their research within a queer lens. Commentary from these scholars reflects the relationship and similarities between feminist and queer foundations of thought:

> Following in [feminist] footsteps… queer perspectives hold enormous potential for discovery and paradigm shifts both in how we conduct research within biological anthropology and in how we develop a pedagogy that invites scholars from all backgrounds to pursue an understanding of human nature through a more nuanced and equitable practice of biological inquiry. For these reasons, we argue that our queerness benefits our work and the ways in which we produce science. The unique perspectives we bring to understanding

> nature—forged in our struggles to understand and accept ourselves in the face of normative societal pressures—give us a deeply personal perspective on developmental and phenotypic variation that has the potential to alter our field for the better. (Smith et al., 2019, 488)

Queer theory was first developed outside of the anthropological discipline, but it has become integral to work that displaces exclusively heterosexual perspectives (Kosofsky Sedgewick, 1990, Muñoz, 1999, 2009). From the 1960s onwards, queer anthropology has considered myriad subjects that align with broader explorations of queer study (Walks, 2014). Early studies focused on largely "male" experiences of queerness, such as male homosexuality and male-deemed genders, which were often portrayed as exoticized "Others" within non-European cultures. The 1980s witnessed an expansion of topics during second- and third-wave feminism, considering the HIV/AIDS crisis, transgender people, sex workers, activism, and homo-sociality. Increased space was given to female same-sex practices and "female-bodied" people, as well as queer family studies. The newest influx of research has put particular emphasis on the impacts of globalization, neoliberalism, migration, and agency on the expression or recognition of queer identity within new matrixes of relations.

Queer-oriented studies have become a less marginal area in anthropology, with increasing consideration of intersections and differences in identity or experience. This shift is "creating institutional conditions of possibility where anthropologists [who study] sexuality and/or anthropologists who identify as gay, lesbian, bisexual, transgendered, or queer could imagine a future for themselves" in the discipline (Boellstorff, 2007, 20). Queer theory focuses less explicitly on sexual practices and more on nonheteronormative identities and sexualities, desire in women, transgender and nonbinary experience,

masculinity, destabilizing myths of heteronormativity, deconstructing binarism, and politicized sexuality (Walks, 2014). Queer studies are also interested in how these experiences are different historically and globally and how they have been differentially impacted by globalization or colonization, thus writing comprehensive histories of queer experience.

For anthropology, foundational queer studies have broadly sociocultural bases. Judith Butler, an American philosopher and cultural theorist, developed a performance-based model of gender identity that described its acquisition as learned and executed throughout the life. An advocate of same-sex marriage, transgender identities, sufferers and survivors of AIDS, and other sex-based human rights causes, Butler's theories of gender are fundamental in social as well as anthropological dialogues. Butler's (1988) essay, "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory," was contemporary with the conversation on sex-gender distinction in anthropology. Feminism and embodiment theory in the expression of the human body were formative to Butler's discussion of gender. In the performance paradigm, gender is a repetition of acts made to perpetually characterize and stylize notions of a gender, creating an embodied and malleable illusion. Gender is thus not determined by sex, is not natural or innate, and does not determine an individual's gendered actions. Rather, the actions determine the performed (and thus perceived) gender in a writing of one's enacted identity.

Queer ethnography has a strong narrative authority in explorations of family structure. Kath Weston, a queer anthropologist and ethnographer, documented "fieldwork and interviews to explore the ways gay men and lesbians are constructing their own notions

of kinship by drawing on the symbolism of love, friendship, and biology" in her book *Families We Choose: Lesbians, Gays, and Kinship* (1991). Her ethnography of queer chosen families in San Francisco disproved the claim that non-heterosexual identity results in isolation due to heteronormative ideas of kinship and family structuring. Instead, Weston recognized that ideas of living and studying familial relationships go beyond biological relatedness and reproduction. In queer constructs of the family, these relationships vary between cultures as well as ethnicities. These structures exist adjacent to the typical American or Western family system, and even its dichotomies of "biological" versus "chosen" families. Queer theory reconsiders the biocultural relations of family or kin and recognizes variation as it exists temporally, spatially, and culturally.

Queer studies are concerned, too, with sexuality. Sexuality, as a form of expression and identity, has been studied on individual and community levels, including its conflict in circumstances of colonization. In discussing the differential understanding and meaning of the Yoeme role of "moreakamem," people of great spiritual power, Shorter (2015) tracks the impact of colonialism on the cultural perception of Indigenous healers. As a result of interactions with Christian views, the use of the term "moreakamem" as it described the identification of an Indigenous healer was obscured in modern generations, leading to the word coming to reference a person's sexuality rather than a role in those communities. Groups more extensively in contact with Christian communities experienced a form of cultural assimilation such as that seen in the attempted eradication of third gender or non-binary people in the American Southwest, often wrought through violence (Roscoe, 1991, Roscoe, 1998). Tracing these bonds between gender, sexuality, and power helps to recall

and decolonize Indigenous identities, roles, or relations after they have been suppressed by colonial agents, revealing their importance in the past and present. Shorter (2015) also considers the ways these identities, roles, or relations can be studied without singularizing concepts such as sexuality that make up multidimensional individuals. Considering the active role of people in these communities and the relevance of local histories is also essential to such decolonial practice.

Gender- and sexuality-critical theories are thus based in a feminist approach but have great weight in queer approaches to gender and sexuality. Linking the body to the material world, queer theory has been influential in social bioarchaeology. Butler's concept of "performance" proposes that gender and sexual identity visualized in bioarchaeological remains and associated materials are created by repetitions that present the appearance of a coherent personal identity (Butler, 1988, Gilchrist, 2004, Nelson, 2006). "Research on gender in historical archaeology is particularly important because written records are often biased in their representations of men and women… If gender is culturally constructed, then it also has a history, and the history of gender roles, symbols, and identities is central to understanding the social and political organization of any society" (Hall, 2006, 107).

In biological anthropology, queer studies challenge biophysical and evolutionary theories about the body. More specifically, scientific explanations for behaviors and phenotypes that have been previously viewed as "inevitable" such as sex are confronted with new knowledge about variation, development, and layered embodiments (Smith et al., 2019). Common and uncommon biological outcomes are reinterpreted as regular distribution along continuums of presentation, all of which require explanation as to their

differentiation and development. While biological anthropology has often considered difference as “abnormality,” “pathology,” or “outlier,” queer studies seek explanation for their existence as anthropology does any evolutionary trait. Reframing difference through the lens of queer perspectives shifts paradigms in how biological anthropology views nature. Queered biological anthropology therefore presents an “antidote” to the objective masculinist anthropology that has coded difference – whether gendered, sexual, or otherwise – as suboptimal. Bioarchaeology is still developing methods for its assessments of gender and sexuality, considering the appearance of gendered burial circumstances in mortuary analysis. Work with populations that hold third, fourth, and other non-binary genders or non-heterosexual relations requires specific, situated knowledge. Queer theory has begun to expand bioarchaeological inquiries of this nature (Holliman, 2011, Sofaer, 2006, MacIntosh et al., 2017).

The role of “queer” in anthropology is under evaluation, as well, to situate it in the most productive space, methodologically, to express and interpret queer narratives (Ruffolo, 2016, Weiss, 2016). Recent work positions “queer” in the current discourse of gender and sexuality studies, in which it represents that which has the potential for expansive discovery. The extension of “queer” goes outside of the heterosexual “normative” but also beyond identity and provokes a constant search for new and unexplored topics. Identity, normativity, and desire are tensions in the past, present, and future of queer anthropology that require unrestrained exploration. Queer anthropology seeks to not only understand the self and the established norm but also the desire to know certain things and why the desire exists. Weiss (2016) cautions that even Queer studies can

reinforce the dichotomy between heterosexuality and "Other" if it does not recognize racialized, classed, and gendered experiences. Queer anthropology can thus be absorbed into neoliberal and academic institutions in a paradox to its anti-normativity basis. To prevent this, Weiss (2016) recommends queer anthropologists always view other ways of being, even when they have oft been categorized as Other. In following this notion of considering multiple narrative identities and experiences, the Indigenous lens offers a radical and essential lens to pursue the same decolonized practice of "opening" as both the feminist and queer.

The Indigenous Lens

While it was exclusionary and problematic towards women and queer people, anthropology is especially fraught for Native, First Nations, and Indigenous communities (Deloria, 1988, Watkins, 2000). Without considering input or perspectives of Indigenous people, the Western anthropological narrative has constructed a history filled *by* rather than *with* the stories of Indigenous people (Watkins, 2000, Gulliford, 2000, Wilson and Yellow Bird, 2005, Denzun et al., 2008). This narrative is often characterized by "extermination, disappearance, cultural stasis and 'primitiveness,' unclear or absent land ownership," and the idea of "abandonment," which erases the continuities and present of Indigenous communities (Conkey, 2005, 31). The Indigenous lens is therefore integral to rewriting these chapters into the greater literature of anthropology.

Indigenous peoples are not anti-research (Watkins, 2000, Gulliford, 2000, Wilson and Yellow Bird, 2005, Denzun et al., 2008). They have always conducted research, as the

collective of Indigenous and non-Indigenous academic alike know research as the purposeful gathering of knowledge, the synthesis of this knowledge, and its presentation to and reassessment by others (Mertens, 2013). Critiques of Western methods and theory are where the wrongness of colonially-derived research exists. Indigenous methods and knowledge disrupt the homogeneity of Western research and institutions (Smith, 1999, Denzun et al., 2008, Kovach, 2010, Kakaliouras, 2012, Mertens, 2013). Methods and theory developed from Indigenous scholars confront the insider-outsider paradox and catalyze reflexivity in Western academia. The paradigms of Indigenous knowledge, thought, and experience direct new epistemologies and ideologies. Scientific privileges and the Western gatekeeping of "true" knowledge are actively decolonized by Indigenous productions and reproduction of knowledge from multiple vantage points.

Within the academic setting, Indigenous theory prioritizes ethical research, relational and interconnected epistemology, and approaches reflecting Indigenous values. Important aspects of preparation for research include accountability, credibility, accessibility, applicability, reciprocity, and tribal epistemologies (Nicholas, 2010, Kakaliouras, 2012). Specifically, researchers using Indigenous frameworks prioritize "(a) that the research methodology be in line with Indigenous values; (b) that there is some form of community accountability; (c) that the research gives back to and benefits the community in some manner; and (d) that the researcher is an ally and will not do harm" (Kovach, 2010, 48). Respect and attention to power dynamics are renegotiated in the research model, a practice not common in earlier iterations of anthropology.

Indigenous frameworks, along the same axis as feminist frameworks, elevate the situatedness of storytelling and importance of place in research (Denzun et al., 2008, Nicholas, 2010, Simpson, 2014, Supernant, 2020). Self-location and reflexivity give scholars the opportunity to assess the purpose or motivations for research, role of culture and identity, and power dynamics involved in knowledge-making. As scientific analysis functions within traditional anthropological narrative, oral histories help frame these Indigenous epistemologies and occupy an important role in the dynamic continuity of knowledge and history:

> The incorporation of narrative, story, and self-location found within Indigenous writing is perceived as indulgent rather than being recognized as a methodological necessity flowing from a tribal epistemology. Inseparable relationship between story and knowing, and the interrelationship between narrative and research within Indigenous frameworks… Those well-versed in qualitative research methods will confirm that story is not unique to Indigenous knowledge systems. Story is practiced within methodologies valuing contextualized knowledge, such as feminism, autoethnography, phenomenology, and narrative inquiry. Terminology like life history and oral history is familiar to these forms of qualitative inquiry… [and] story works as a decolonizing action that gives voice to the misinterpreted and marginalized. (Kovach, 2010, 84-98)

Methods of the Indigenous lens are not a homogenous approach, as it involves the worldviews of myriad Indigenous groups and settings. Considerable variation is necessary to address questions and tell the stories of populations within just one region of North America (Denzun et al,, 2008, Nicholas, 2010). An Indigenous lens does, however, have a broader conceptual practice that critiques colonizer viewpoints while reanalyzing anthropological knowledge through Indigenous experience. Components include "thousands of years of Indigenous science [held] in Indigenous knowledge systems, carried

in a format that people remember: through stories. Carrying knowledge through stories has been central to the survival of Indigenous knowledge" (Atalay, 2020, 8).

Incorporating the Indigenous lens in academic or scientific discourse engages with oral traditions and personal accounts as veritable evidence for interpreting anthropological materials and the human past. Traditions of Western science and traditional knowledge can be integrated as "intersecting magisteria," or domains of authority, to explore and construct in a mutually informed fashion (Colwell, 2010). Alongside feminist and queer lenses, writing the past through an Indigenous lens decolonizes anthropological work by critiquing and deconstructing Western practice. It also reengages neglected resources and provides alternate traditions for understanding the past instead of privileging the oral histories or traditions of colonization (TallBear, 2014, Colwell, 2010, Conkey, 2005). Indigenous anthropology work is thus capable of investigating and recovering Indigenous experiences, practices, and narratives.

Within Western narrative frameworks, a prologue functions to provide context for the story that follows. The prologue may offer explicit disclosure of one's conceptual, theoretical, and research frameworks, providing insight to a researcher's influences and how those beliefs may impact the research project. Within Indigenous writing, a prologue is an introduction that can illustrate function for the non-Indigenous readers when Indigenous knowledge is shared for research purposes (Smith, 1999, Kovach, 2010, Mertens, 2013). Interpretive qualitative research comprises the stories of researcher and research participants alike, and these stories are reflected in the interpretation of meaning. This dynamic between established stories and created stories follows the tradition of

Indigenous ontologies, which build connections, continuities, and relations within lived contexts much as oral history integrates aspects of the past into an unbroken chain. To avoid the categorical and definitive language of "objective" science, language within Indigenous analysis also embraces more fluid, metaphorical, and interpretive narrative presentations. The inclusion of anecdotes, metaphors, and stories improve the accessibility of academic language, especially for Indigenous audiences, and reflect expanded epistemological tradition.

Anthropology specifically benefits from the reorientation of narrative by Indigenous voices. Indigenous people have for centuries been the subjects of traditional anthropology, ethnography, and societal oppression in the United States. Vine Deloria Jr. (Standing Rock Sioux) (1988) provides a critical Indigenous perspective of the anthropologist as they exist within an Indigenous space, often there to make their own observations about Indian life within the settings of Native reservations. In *Custer Died for Your Sins: An Indian Manifesto*, Deloria lambasts anthropology for its integral role in colonization throughout the history of the Americas. Deloria assesses the reports of anthropologists as essentialized and reduced to provide the Western viewer with the most palatably simplistic, thematic messages about Indigenous life. Anthropological thought and observation, he states, are preconceived to fulfill the assumptions that white Americans have about Indigenous people they claim to "study" only for the verification of such ideas. "The fundamental thesis of the anthropologist is that people are objects for observation, people are then considered objects for experimentation, for manipulation, and for eventual extinction" while also mythologizing what an "Indian" is or looks like (Deloria, 1988, 81).

These projects, while necessitating a substantial amount of research money be spent, do not directly benefit the communities being observed and rather help reify the authority of researchers while they define (but make no attempts to resolve) what they perceive as the essential problems within Indigenous communities.

Anthropologists who choose to adopt Indigenous theories and methods begin to reorient the field from the inside. Those practicing Indigenous anthropology build upon the diverse experiences and knowledges of Indigenous people by exploring topics such as ethics and human rights, historical effects of colonization, decolonization, collaborative research, effective research communication, and repatriation and reburial (Habu and Matsunaga, 2007). Reoriented towards decolonization, anthropology becomes "more inclusive and rich without sacrificing the rigor and knowledge production capacity that make [it] such a powerful tool for understanding past lifeways" (Habu and Matsunaga, 30, 2007). Critical Indigenous anthropology is geared towards multivocality and the elevation of previously suppressed voices, using both the "master's tools" and the consented tools of Indigenous experience to reassemble scientific application and practice in a way that is not harmful to or continues the dispossession of intellectual traditions from those previously disenfranchised by the same science (Denzun et al., 2008, Todd, 2016). Using multiple trajectories of knowledge and lines of evidence only strengthens the conclusions drawn from anthropological research. Denzun et al. (2008) express a concise vision of critical Indigenous inquiry as it may appear in anthropological science:

> [This approach] should meet multiple criteria. It must be ethical, performative, healing, transformative, decolonizing, and participatory. It must be committed to dialogue, community, self-determination, and cultural autonomy. It must meet people's

> perceived needs. It must resist efforts to confine inquiry to a single paradigm or interpretive strategy. It must be unruly, disruptive, critical, and dedicated to the goals of justice and equity… Critical Indigenous inquiry begins with the concerns of Indigenous people. It is assessed in terms of the benefits it creates for them. The work must represent Indigenous persons honestly, without distortion or stereotype, and the research should honor Indigenous knowledge, customs, and rituals. (Denzun, 2008, 2)

As feminist lenses can be taught to people not identifying as femme or female, Indigenous frameworks can be learned by non-Indigenous scholars and improve researchers' critical thinking "about the complexity and nuances inherent in issues of heritage, reburial and repatriation, research ethics, intellectual and cultural property concerns, and decolonization practices" (Atalay, 2006, 301). The tension between anthropology and Indigenous communities, however, make it such that Indigenous scholars using this lens are valuable agents for anthropological knowledge-making. Native American and First Nations anthropologists provide a leading example for the application of this lens in anthropology. Beyond providing a new expansion of practice and theory to the science, Indigenous anthropology by Native American and First Nations people provides a space in which to reclaim recognition, sovereignty, and cultural control over a history typically possessed and written by non-Indigenous scholars.

Sonya Atalay (Anishinaabe-Ojibwe) discusses how Indigenous scholars in America continue a traditional stewardship of teaching, examining, learning, and protecting their heritage through access to the materials and remains to which they are culturally linked. Her article "Indigenous Archaeology as Decolonizing Practice" (2006) outlines how sovereignty was disrupted by looting and gatekeeping practices, whilst the cultural connection to these "collections" of Ancestors or material culture was still held by

descendant groups. For the purposes of this project, “descendant groups” does not exclusively entail biologically or genetically related descendants. There is further inclusion to those affiliated to Ancestors in non-biological descent relations, recognized kin or clan identities, association through shared culture or community, and land- or non-land-based affiliations.

Community story-telling and sacred meaning were disrupted by colonization, which Native people resisted for centuries. In the sixties, Native activists critiqued the structural violence within established colonial systems, and the following decades produced various legislation and literature reinscribing Native sovereignty over the remains and materials of their Ancestors (Atalay, 2006, Conkey, 2005). Repatriation laws such as NAGPRA were an important corrective for anthropology. They compelled researchers to formulate meaningful questions about who or what they could study and why research is necessary. Bioethics discussions also guided the discipline toward more engagement with real world problems (Martin et al., 2013). These changes brought with them new and vital stories.

Ethical conduct (as directed by bioethics) is a primary concern in bioarchaeology, a subfield in which Indigenous critique can serve a particular purpose: atoning for a past of stealing, dehumanizing, and mishandling Native American (among other) Ancestral remains (Denzun et al., 2008). Anthropological study with Native remains or material culture is still more often conducted by non-Natives, which predisposes work to the inherent “Othering” that comes from Western-perspective anthropology. In his discussion of Native survival in the Pueblo Southwest, Native anthropologist Michael Wilcox (Yuman

descent) argues that anthropological evidence may be ambiguous to outsiders, leading to the misinterpretation of life histories from the remains and archaeological remnants of Native people. While Western views often focused on epidemic disease and abandonment, the application of Indigenous anthropology emphasizes interaction, culture change and continuity, resilience and resistance after European arrival. Wilcox (2009) documents the maintenance of tradition and community identity through the Southwest in contradiction to many previously constructed "terminal" narratives. The treatment and circumstances of burial, Wilcox further states, can be better interpreted by culturally affiliated or descendant groups if it is information they are comfortable relaying to a scientific public. An important enterprise of Indigenous anthropology, then, is to consider the extended narrative held between Ancestral and descendant populations, especially in relation to remains and mortuary practices (Denzun et al., 2008, Wilcox, 2009, Martin et al., 2013).

> If there is one thing that physical anthropologists who work with human skeletal remains and Native American repatriation activists can agree on, it is that human remains are powerful—powerful manifestations of wrongfully disturbed ancestors in the present, powerful tools for interpreting the past, and/or powerful nodes of political struggle in the history of the repatriation movement… osteological subjects are generally incommensurable with Native ones especially because their construction often requires excavation and sustained physical contact, a situation of disturbance and disrespect perceived as dangerous to many Native people… Osteological subjects also bear little resemblance to the imagined or remembered lives of indigenous ancestors. (Kakaliouras, 2012, 216)

While repatriation has become an essential reconciliatory activity within American bioarchaeology, Indigenous frameworks may do related reparative work for descendant communities. Human remains in bioarchaeological research, as well as in repatriation, can be sources of empowerment for consenting descendant populations. Practice with, for, and

by Indigenous people – whether this be collaborative or Indigenous-designed – includes decolonizing methods in sync with the research goals of such communities. Work is conducted in harmony to traditional knowledge and lifeways, benefiting from the involvement of Indigenous scholars and representatives. Indigenous anthropology contributes to "helping Indigenous communities recover knowledge and traditions as well as in working to counter efforts of intellectual and spiritual colonization" (Atalay, 2006, 284). The recovery of pre-colonization lifeways or histories can even inform current health and well-being (Atalay, 2006, Conkey, 2005).

In terms of collaborative work, anthropologists and Native peoples working together through an Indigenous lens can render more complete and active narratives of the past (Habu and Matsunaga, 2007). Indigenous anthropology "incorporates multiple perspectives on the past and can only lead to the development of a healthier, more intellectually resilient field, conscious of but not limited by its colonial associations" (Wilcox, 2009, 26). Such collaborations are enormously rewarding not just to the professional creation of research, but also personally for both Native and non-Native groups (Katzenburg and Grauer, 2018). These efforts bring valuable knowledge to non-Native renderings of history that exclude Indigenous experiences of the past. They further dismantle stories of conquest or annihilation previously used to justify discrimination and dispossession of Native people.

Indigenous people should ultimately control the access and use of their narratives within research. Anthropologist Kim TallBear (Sisseton Wahpeton Oyate) considers the risks and benefits of research when Indigenous knowledge is ascribed to anthropological

narratives. The extent to which traditional knowledge is made available to Western anthropologists is granted by the Indigenous scholar who chooses to "give back" and "stand with" their community in constructing such research. Indigenous researchers target "a key symptom of a major disease in knowledge production" that "softens [a] boundary erected long ago between those who know versus those from whom the raw materials of knowledge production are extracted," the model formed by colonial-based research (TallBear, 2014, 2). This change is more effective and profound from inside fields and disciplines. Even more progressive and reflexive is the Indigenous-conducted study of Western people or science, for which TallBear is known.

In an essay reflecting on the "The Strange Marriage of Anthropology and Native America" (2011), Orin Starn contrasts a reborn anthropology of "Native America… in ways almost unrecognizable from the days of Boas and Kroeber… [A] predominantly female new generation of Native American scholars is increasingly shaping the anthropology of Native America… navigat[ing] the dilemmas of allegiance and analysis, insiderness and outsiderness, and secrecy and disclosure in ways that both overlap and differ from their non-native colleagues" (Starn, 2011, 184). The new focus on insider anthropology aligns with a move away from "salvage anthropology" towards an informed (not through "informants") position that prevails in North American studies. In addition, "collaborative ethnography and anthropological involvement in repatriating bones and sacred objects, tribal struggles for federal recognition, and language preservation and recovery" have become the primary activities of engaged Indigenous anthropologists, a

reversal from the coveting of Native remains and materials that occurred through the late twentieth century (Starn, 2011, 185).

Credit in the ontological shift of decolonized theories must be afforded to the groups that have made it possible, as Indigenous stories are still "often employed without Indigenous peoples present to engage in the application of them in European work" (Todd, 2016, 7). Non-Indigenous anthropologists using this framework should deliberately cite and engage with Indigenous scholars, not just employ it in non-Indigenous academic discourse. To speak these narratives without reference to their origin continues to privilege certain (white) voices within Indigenous epistemologies. Non-Native anthropologists in America must also recognize the harms committed in the past (i.e. graverobbing, damaging excavations, the exploitive purchase of cultural materials) without narratively excusing these harmful acts. Further, tracing present-day systems to examine positions of power will reveal how the colonial past influences the present of American institutions, including that of anthropology. When working with Native people and scholars, non-Native anthropologists need also to avoid turning these agents into informants or essentializing their Indigeneity. Indigenous anthropology helps direct the nuance of such practice. As a form of "braided knowledge" (Atalay, 2019), it can work alongside Western frameworks to accomplish more relativistic and relational work. As such, Indigenous anthropology can be consciously, critically integrated with other approaches, such as the feminist or queer lens, to conduct intersectional research and narrative-making.

Intersecting Identities, Intersecting Theory

Intersectionality, as a theory developed by Black feminists, recognizes "the hierarchies of gender, race, economic class, sexuality, nationality, ethnicity, and so forth, are intersected; there is an intersectedness of these hierarchies… While we might think at and from the margins, we can truly act at the intersections" (Conkey, 2005, 9-12). It is without argument that an anthropologist cannot discuss or examine every aspect of experience and identity at once, and this concession allows for the particular examination of race without always involving gender, or vice versa. All aspects are, however, readily interrelated. This woven state of existence is such that the lenses discussed above are also readily intertwined (Boellstorff, 2007, Denzun et al., 2008). Intersectional approaches refute the essentializing and simplifying practices of colonial identification, which often reduced people to one label that fit the Western framework. Intersectional approaches also provide valuable insights when applied to relevant research, such as the lives of Indigenous women or Two Spirit peoples.

Multiple axes of intersecting knowledge and narrative-making exist within the frameworks of feminist, queer, and Indigenous anthropology (Arden, 2008). Black feminism, for example, has been particularly co-constitutive with Indigenous research, through its semi-marginalization by white Western feminism. Through Indigenous feminism, "Indigenous people and Indigenous women among them seek to not only express but also end their oppression, as do feminists" (Conkey, 2005, 32). Indigenous and feminist anthropologists integrate the intersections of race, ethnicity, and gender in their analysis. (Conkey, 2005, Denzun et al., 2008) These lenses carry a long list of mutual characteristics:

(1) they are human-centered practices, in which experiential, material, and contextual lines of evidence have a role (2) they ask questions of complex identities, inequality, and difference, (3) they embrace the personal rather than the "objective," seeking understanding rather than "truth" (4) they reconceptualize how anthropology is conducted, and (5) they bring together divergent perspectives to narrate the past without producing essentialist narratives.

Conkey (2005) addresses the anthropological use of Indigenous theory alongside feminism in her masterful treatise to these lenses. Two interpretive dimensions integral to both feminist and Indigenous anthropologies, Conkey states, are "the place and role of experience in interpretation and the uses of oral traditions and storytelling" (Conkey, 2005, 26). These are both unique aspects of anthropological narrative – respectively, its formation and repetition within the science – that move beyond the self-referential to connect a reading of the past to a certain time, space, and people. Of course, as no singular Indigenous approach can address the nuances of all Indigenous communities, no singular feminist approach can cover the ideologies or research interests of all Indigenous groups. The two lenses may also not be equitable in their importance. Indigeneity may take priority over feminism in different projects, and the perspectives benefit from cross-scrutinization to address any incompatibilities to Western feminism (Conkey, 2005).

Non-Indigenous anthropologists cannot lose the value of women as they exist within Indigenous communities. Certain divisions of labor and gender identities are indispensable to Indigenous lifeways, and the value of gender divisions do not necessarily create a hierarchy akin to that in Western binary dynamics. The erasure of female

contributions to Indigenous societies is a harmful residual effect of colonial narratives, and the functions of female-identified Indigenous people must not be minimized. Well-built intersectional thought should therefore put emphasis on the unique community it works with while considering the broader sociocultural or political structures that have contributed to the establishment and continuation of oppression.

Queer Indigenous studies are also of great merit and importance to renewing narratives about identity and history in ways that do not erase Indigenous experience (Miranda, 2002, Denzun et al., 2008). Non-binary gender identities were common in the Americas before colonization, and revitalizing their recognition is of high cultural value for Native American communities (Roscoe, 1991, Shorter, 2015). Native people, before colonial attempts at cultural extermination, accepted and sometimes revered third and fourth gender people for their contribution of unique qualities, roles, or skills to their communities. Identities include the *lhamana* of the Zuni or *moreakamem* among the Yumen (Roscoe, 1991, Arden, 2008, Shorter, 2015, Picq and Tikuna, 2019). Although sexuality and gender diversity among Native peoples are historically frequent, these spectrums were repressed through European influences, violence, and the same dispossession of identity or community role that claimed lives alongside material dispossession (Smith, 2020). This erasure continued into the scientific assessments of bioarchaeology. Indigenous models of kinship, embodiment, and desire, however, produce Indigenous queer modernities that destabilize the assumptions of “natural” within settler colonialism and return the narrative to Indigenous peoples (Morgensen, 2010, Denetdale, 2017).

Instead of forcing binarism onto bioarchaeological samples, sex in Ancestral Native communities should be viewed on a continuum or spectrum, a queer Indigenous approach to sex that is also supported by current scientific understandings of sex variation. The medical community has for decades identified people who are born neither male nor female, as intersex people represent a consistent portion of the population (around 2%), and cultural groups globally have recognized these individuals alongside non-binary and transgender identities for millennia (Fausto-Sterling, 1993). Yet, the majority of studies in bioarchaeology continue to place human remains into one of two sex and gender categories, male and female or "man" and "woman." This is despite acknowledging the technique used to estimate the sex of a set of skeletal remains itself non-binary, established as a spectrum of "probable male" to "probable female" with "indeterminate" existing as the androgynous interim. Bioarchaeology has previously resisted connections between skeletal data and non-binary gender theory due in part to its empirical and cultural ecological foundations. This is an important issue in which to develop theory that addresses cultures in the past that operated on non-binary models, especially in which gender did not rely on the identification of biological sex.

Past engagements often do not fully address a deeper productive engagement, but the growth of social and Indigenous bioarchaeologies continue to problematize the connections between ancient constructions of gender, sexualities, and biological bodies (Klaus et al., 2017). Throughout North America, ethnographic reports and archaeological evidence support the presence of third gender people, which should have an impact on how human remains from these same populations are analyzed and interpreted in

bioarchaeological studies. Both sex and gender influence a person's relations and daily activities, suggesting that bioarchaeology is suited for and necessitated to expand on its visualization of nonbinary gender in human social systems (Martin et al., 2013). While methods for identifying intersex or non-binary gendered individuals in bioarchaeological populations are in their infancy and are perhaps intangible in many cases, acknowledgement of these individuals is essential when approaching a study population in which they lived. "Any portrayal of native cultures in North America that fails to include gender diversity is flawed, ethnocentric, and, ultimately, wishful" (Roscoe, 1998, 21).

Indigenous "queerness" also exists outside the modern, Western frameworks and terminology of LGBTQ+ communities (Morgensen, 2010, Rifkin, 2012). An Indigenous framework reduces the misinterpretation of these experiences or roles within Indigenous communities of the past. Western-centric queer and feminist theory may categorize Indigenous people on the assumption that modern concepts of pluralistic sex and gender are relevant to all cultural understandings of "identity." Indigenous frameworks of queerness, by contrast, afford anthropologists different epistemologies for sexuality and gender axes (Roscoe, 1991, Roscoe, 1998, Ferris et al., 2014). The ethnographic fixation on non-binary and non-heterosexual men has also led to the erasure of fourth gender and non-heterosexual woman in Native populations. More "fourth-gender" people (individuals assigned female at birth who hold non-female identities and roles) may have existed than were documented. Such erasure may be due to the lack of anthropologists seeking women informants, the minimization of empowered female-presenting people after the arrival of Europeans, and the concentration on male roles in early anthropological

literature. Fourth-gender people such as manly-hearted women and women chiefs held specialized responsibilities, spiritual power, gender distinction, and same-sex relationships that can diversify the anthropological narrative of Indigenous life.

There is a growth of literature in this area of anthropology. However, a turn to critique is necessary. Essential articles published in the *GLQ: A Journal of Lesbian and Gay Studies* and even the titulary collection *Queer Indigenous Studies* cannot be used uncritically in conversations of intersecting queerness and Indigeneity. These publications were authored by academics who professed and later redacted their affiliation to Native groups, namely the Cherokee Nation. It has become necessary for Cherokee representatives to make statements about the legitimacy of claims to enrollment among Native-identifying scholars. An increasing number of published Native people are confessing to or being revealed to have no relationship to Native communities. These occurrences are not singular or even rare, as more literature is recognized as having misrepresented origins in a contemporary era of identity-informed scholarship and activism. The appropriation of Indigenous identities is a continuation of colonization in which claimants occupy the roles of Indigenous scholars and participate in false narrative creation. This threat to knowledge-making will soon need to be addressed if these lenses are to retain their purpose in the discipline.

Conclusions

Different perspectives impact the questions, methods, techniques, analyses, communication, and conclusions of science, specifically here of anthropology and even

more particularly bioarchaeology. In the past four decades, practices of decolonizing and reformulating anthropology have led to claims that the discipline is in active crisis, enduring an unattainable remaking as revolutionary scholars seek to expunge colonial notions from a field steeped in its legacy. Anthropology is still being progressively de-centered by the contributions and recognition of marginalized groups in its scholarship, dispelling an earlier relationship in which these anthropologists had to adapt to a hegemonic language, practice, and narrative to survive. Dissatisfaction with anthropological representations of women, queer, and Indigenous peoples propelled these scholars to develop new approaches, subverting old narratives to construct new, more informed ones. These are also the communities in which the "crisis" of traditional anthropology is not resonating with the same timbre. "Other" anthropologists – female, queer, Indigenous – are not experiencing a demystification but rather an illumination as their work comes closer to the forefront. It is in this transition from marginal to central that works by feminist, queer, and Indigenous anthropologists organize panels at AABA meetings or headline special editions in journals. While there is still ground to reclaim in terms of non-English publications and representing these authors in scholarly anthologies, progress has been made. The theory, practice, and stories of anthropology have thus benefited from "Other" people's anthropologies (Boskovic and Eriksen, 2008).

No singular understanding exists for decolonization and decolonizing practice within academics or science. Anthropology can benefit from treating each disparate approach as one of many perspectives affected by and counter to white Western patriarchal systems of sexism, homophobia, racism, and – ultimately – colonialism. Feminist, queer,

and Indigenous anthropologies are valuable for reformulating the ideologies used in constructing the anthropological narrative. Each of the three approaches can engender "procedures and technologies for decolonizing the imagination as the methodology of the oppressed," thus altering the narratives produced (Sandoval, 2000, 69). Any alternative perspective promotes accessibility through venues that are not "traditionally" scientific, which mobilizes knowledge in ways that are valuable to marginalized groups (Atalay, 2020). Scholars who apply any – or a combination – of these theories to their research are positioned to reassess the work already done and to produce new interpretations not considered before. Intersections of these lenses develop more reflexive, relational, and representational analysis, some of modern anthropology's primary goals (Conkey, 2005). Kim TallBear gives a concise evaluation of such investigators:

> "A researcher who is willing to learn how to "stand with" a community of subjects is willing to be altered, to revise her stakes in the knowledge to be produced. I should say up front, a multi-disciplinarist or someone eager to challenge disciplinary norms and someone with a varied professional background will see many more opportunities to do this and is more likely to have the skills to carry it off" (TallBear, 2014, 3).

Rather than placing value solely on objectivity or normalized perspectives, each of feminist, queer, and Indigenous anthropologies invite active, informed researchers to practice their research agenda with consideration for the stories they develop and tell (Roy, 2008). Just as traditional anthropology was not objective, nor are these approaches; all knowledge is shaped by ideology (Frost, 2016). These lenses are knowledgeable in situated ways that provide value to a field focused on human variability and differential experience (Haraway, 1998, Harding, 1995, Wylie, 2012). They are situated from social and bodily

experiences, as anthropology in a four-field, biocultural narrative addresses and can be layered into a kaleidoscope to create colorful, varied spectrums of knowledge. The conceptualizations of situated knowledge, standpoint, and strong objectivity all support bioarchaeological research that considers the biocultural, bodily experiences of once-living people can benefit especially from the integration of feminist, queer, and Indigenous perspectives. Just as any scientific paradigm, the three lenses are instruments for composing bioarchaeological texts of the past. Developing new tools and inviting new authors is only the beginning of changing the practice of this science.

CHAPTER THREE: A SYNTHESIS FOR CONTEXTUALIZED HUMAN REMAINS – HYBRIDIZING BIOARCHAEOLOGY, MORTUARY ARCHAEOLOGY, AND PALEOPATHOLOGY

In a field of ever-evolving research questions, methods, and theories, the discipline of bioarchaeology constantly adapts its tactics for understanding the human past through its enduring cultural materials and biological remains. The fusion of independent subdisciplines has thus directed the growth of biocultural anthropology, binding disparate lines of evidence for more holistic forms of interpretation. Some studies in bioarchaeology have progressed towards such an approach by synthesizing mortuary archaeology and paleopathology to bioarchaeological practice, interweaving two subfields with integral contributions to the greater study of past human populations.

By reconstructing the body as a once living person with unique cultural and biological circumstances, this mode of research develops a more complete understanding of the individual and how their life course (e.g. physical condition, occupation, identity) influenced the conditions of their remains and grave, information that is critical to a fuller and accurate understanding of lived experience. Recent research demonstrates that lived experience is a significant component in the larger experience of health, well-being, and stress, and these circumstances will also have an influence on burial. This argument is

illustrated by case studies in the American Southwest. Examples of mortuary and paleopathological analyses of Ancestral Pueblo skeletal populations have engendered particular and compelling stories about the history of these communities, centuries after their cemeteries were no longer in use. Through exploring the cultural history, burial context, skeletal remains, and skeletal pathological conditions of these populations, bioarchaeologists have constructed valuable interpretations to be considered alongside Puebloan knowledge of the past. These narratives not only emerge from the occupants of each grave but expand beyond the individual to the relationships and environment they experienced. When aggregated, these many singular stories can contribute to one of the ultimate goals of bioarchaeology: the collective history of a population.

Literature Review

As a science, bioarchaeology considers the remains of people – individuals and populations – that lived hundreds or thousands of years before the present. It is a scientific exploration of humanity through the biological and cultural evidence they have left behind, with particular attention to skeletal and dental remains (Larsen, 2015, Harrod and Perez, 2013, Stodder and Palkovich, 2012, Agarwal and Glencross, 2011, Buikstra and Beck, 2006). Bioarchaeologists reconstruct the past through detailed analytical practice, such as delineating biological profiles or tracing trends in biological secular change. The remains studied by bioarchaeologists are recognized as once-living people who operated in biocultural circumstances and through biocultural relations, just as living people do today. Within well-conducted bioarchaeology, then, “each skeletal sample should be examined

and understood within the context of their reality and not just the sum total of frequencies and metrics" (Zuckerman and Martin, 2016, 152). By employing multiple avenues of method, diverse data sources, and theoretical frameworks, bioarchaeology and its biocultural modeling provide an opportunity to delve into the biology, culture, environment, and history of a population.

Bioarchaeologists must consider their individual theoretical lenses – established in the philosophy, organization, and ethos of their analysis – and the pragmatic framework through which such theory is applied. They must also employ the assembled theories and methods of related disciplines. A summary of recent literature associated to mortuary archaeology and paleopathology provides context for the research being conducted in these subfields. Each has its own respective methods, theory, and data components to analyze past populations. To establish their individual value, examples of research trajectories will also delineate how mortuary archaeology and paleopathological approaches tend towards a biocultural telling of the past. We may then assess how these disciplines are stronger when integrated, demonstrating the deeper insight of its application to bioarchaeological inquiry.

Mortuary Archaeology – A Sociocultural History

Mortuary archaeology, in its most simplistic definition, is the study of material culture in the archaeological burial context. It is a subfield of archaeology, the science of ancient and historical human remains. Mortuary archaeology draws theory and method from cultural anthropology, archaeology, and other humanities or social sciences to

interpret human remains within the circumstances of burial. Sophisticated research thus entails the understanding of burial practices and skeletal biological profiles. When conducted well, mortuary archaeology is a detailed form of contextualized analysis and reveals histories of the buried individual, those who buried them, and the associated society as it existed over time. It can help illustrate gradual or radical changes in the treatment of the dead or the potential meaning of burial locations and cultural symbols preserved alongside the deceased, as well as a wide range of social, economic, political, ideological, and cosmological features (Parker Pearson, 2000, Williams and Giles, 2016). The ultimate skill within the subdiscipline is to learn how to most accurately read the elements encoded within ancient burial patterns (Shimada et al., 2004).

When conducted in simplistic frameworks, however, mortuary archaeology can produce inaccurate reconstructions of the past. A large part of history in this discipline is characterized by the theoretical paradigm of processualism in which skeletons within these same graves were never part of the discussion, the data from human remains treated as uninformative, static biological artifacts with little relevance. The interpretation of social complexity from mortuary practice is directed by whatever epistemology is applied to the available data. From the 1950s through 1960s, early expressions of processual archaeology prioritized a descriptive approach oriented by a historical "process" in which cultures and populations progressed through stages of complexity (Hodder, 1982). Processualism prescribed evolutionary transitions in culture via the assessment and categorization of differential mortuary practices, among other lines of archaeological evidence. Mortuary analysis was dominated by materialist-ecological paradigms and concerns of universals,

directed heavily by Binford's cultural scholarship (Binford, 1971). Knüsel (2010) contends that, as a bioarchaeologist reading material from this period, it would seem the human remains in a burial were there as offerings to interred ceramic vessels and beads. This research model appeared backwards to producing knowledge about past peoples and worked against a more complete and holistic understanding of mortuary contexts. This is the crux of critique towards the singular and isolated practice of mortuary archaeology.

Archaeology and emergent bioarchaeology aligned to processual paradigms, reflecting them in part through a fixation on status as inferred from grave goods. This foundation did not consider agency or relevant belief systems in the interpretation of mortuary tradition. As a result, there was a distinct lack of consideration for the impact of religious or philosophical beliefs in the symbolic development of mortuary contexts. This paradigm sometimes directed research towards ecological and biological determinism, but the methods developed within this paradigm are defensible within relevant applications in biocultural research.

Valuable tactics of analysis were optimized for processing mortuary data. Statistical analysis and modeling were available to create reproducible and scientifically-supported results (Leatherman and Goodman 2020). Biocultural research has been conducted using the processual approach to explain how different evolutionary or adaptive biological results have occurred in different regions, times, or populations as determined by sociocultural contexts. Biocultural research that utilizes processual methods are still useful in the holistic exploration of social, cultural, or political influences over biological outcomes.

In contrast, the postprocessual approach was developed in the late 1970s and early 1980s to critique processual perspectives as deterministic, simplistic, and dogmatically scientific (Armelagos 2003, Armelagos and VanGerven, 2003). A shift began in the 1990s to consider a more comprehensive view on factors outside of hierarchical constructs. By abandoning descriptive or typological anthropology, postprocessualism – alongside the "new" archaeology and biological anthropology – supported holistic, integrated understandings of social complexity in bioarchaeological populations. Contextualization, symbology, and humanistic knowledge were incorporated into postprocessual analysis. Research involving the mortuary record could thus connect factors of once-living communities to mortuary practice without reducing the human element. This new paradigm was especially valuable in assessing the pasts of deep historical hunter-gatherers, who were previously characterized as "simplistic" by processual analysis.

In a more political sense, postprocessualism could "document the increase in the gap within and between societies" that determine aspects of social hierarchies without deeming such differences as "natural" or evolutionary (Armelagos 2003, 32). The utility of considering political, economic, and sociocultural processes in analyses of human biological variation, nutrition, health, epigenetics, and embodiment allowed anthropologists to engage with problem-based research (Leatherman and Goodman 2020). The postprocessual approach aligned with those in public health, medical anthropology, and structural violence studies. Similarly to these applications, postprocessual anthropology was self-reflexive, critical, and recognized the subjectivity and inaccurate homogenization of bodies and responses inherent to statistical lenses. Postprocessual

mortuary analysis thus "[depended] on historical and ethnographic analysis…in critical biocultural/biosocial approaches" (Leatherman and Goodman 2020, 9).

Bias is still inherent to any singular mode of knowledge production, and these two approaches have complementary strengths and utility. Mortuary archaeology has demonstrated their complementary nature. What may be referred to as "processual plus" was an approach to mortuary practices and research that integrated aspects of processual and postprocessual work, promoting scientifically-informed exploration with social contextualization (Carr 1995, Shimada et al., 2004, Klaus, Shimada et al., 2017). Investigators could support both processual and postprocessual statements with the combined recognition of value for quantitative and qualitative data sets or analytical methods. This integration was demonstrated aptly in the cross-cultural survey conducted by Carr (1995). Carr provided categories of influences from which mortuary features and funerary practices might be chosen. Categories include social organization, philosophical-religious beliefs, individual identity, and environmental features. Carr's systematic exploration employed the scientific, evolutionary prospects of processual anthropology whilst not discounting the importance of more humanistic, belief-based, and contextual factors of mortuary practice.

Studies of spatial organization and memory within mortuary contexts moved beyond the dynamic of the processual/postprocessual divide. Cannon (2002) conceived of "spatial and historical dimensions of mortuary expressions, and explicit recognition of their basis in personal, social, and symbolic memory" as being evidence of social change and continuity facilitated by pressures that could be assessed through an agent-contextualized,

scientific approach. In this model, mortuary practices fulfilled the interests of the living, and changes reflected an unconscious cumulative narrative of individual choices and reactions to lived circumstances. This understanding of changes in mortuary practice rejected the notion that central tendencies or social trends were the guiding force of mortuary practice, a critique posed to the evolutionary processual and cultural postprocessual models. Memory (personal and social) and agency became new factors of analysis that emphasized particular biocultural experiences over generalization. Mortuary analysis now employs a wealthy array of methods to consider the complexity of body treatment, the construction of placement during internment, material contributions, and the extent of ritual mortuary behavior (Buikstra, 2019, Katzenburg and Grauer, 2018, Gamble and Russell, 2001). Material grave items, while still considered, are no longer seen in one-dimensional weighing systems of value. Rather, quantity, quality (rarity, nonlocal), manufacture energy, cultural meaning, and cultural use (religious or secular) are factored into their importance.

Mortuary or burial ritual is integral to the living, and mortuary contexts essentially preserve a social memory while reflexively creating a social "present" through cultural acts. Many sociocultural, religious, and economic factors within a living population influence mortuary practice, so what remains as evidence of those practices hundreds or thousands of years later are inseparable from such behaviors. Social meanings exist, too, within the contextualized skeletal assemblage. Burial symbolism may communicate the roles, identity, relationships, or status of the buried. Redundancy or repetition of certain symbols among multiple graves provides greater assurance to their reliability in the record,

and a bioarchaeologist may interpret social meanings or associations by relating cultural characteristics to other frequently associated burial aspects, including the remains themselves.

Symbols and materials can also infer the unpreserved elements of mortuary practice, such as ritual or religious belief systems (Tainter, 1978). Because the grave is the most immediate context for the individual as established by the living community, the memory stored within it conveys the historical interplay between dead and living, individual and society, and cultures of the past (Martin et al., 2013, Robb et al., 2001, Marden, 2011). To fully understand the meaning of mortuary symbolism, a researcher may reference written records, oral traditions, and ethnographic evidence to reconstruct the conditions that existed before the disruptive influences of European contact (Gamble et al. 2001). These records may not perfectly match mortuary evidence, and the research also cannot assume that historic documentation of item uses remained the same through time. It is also possible that the symbolic significance of objects in burial contexts is unrelated to their use in activities of the living. Sound research on beliefs of the past will require that researchers become much more familiar with the systematic organization, themes, and contents of cosmologies or world views, biocultural circumstances, and constraints.

Considering the individual within a grave, the social persona is composed of many sociocultural identities that reflect aspects of responsibility or principle in a society. The persona within a burial is *perhaps* indicative of the individual's identity and structures existing in their society. Dimensions of recognized social personae in a living population and the grave will vary between societies and even in their expression between individuals

of the same cultures over time. Complex mortuary ritual and practices may then reflect the same complexity or differentiation of persona as available in a culture (Tainter, 1978). These symbolic layers of the individual are to be studied in relation to the biological profile, namely the factors of approximated age, sex, stature, occupational indicators, and pathological conditions. The classification of mortuary data is often conducted using statistical clustering or multivariate techniques to distinguish or identify interrelation between these variables. Analysis will further consider burial deposits or distinct cemeteries as they may be identified to particular social groups, whether these be biological, residential, or related to other levels of social identity.

Archaeological materiality of layered, "plural," and often changing social identities of the living may be interpretable from the contexts and bodily treatment of the dead, a process that is also contingent on contextualization (Casella and Fowler, 2005). Factors such as ethnicity, class, gender, sexuality, age, personhood, health, and religion may be expressed for individuals. "Identities," if they were even recognized as such within the deep past, are often not being realistically, entirely, or meaningfully expressed, but evidence of variation is still of great import. Processual archaeology has led to the erasure of multiple or scalar types of identities through traditional binarism study. Still, "unless archaeologists are studying a culture for which abundant documentary and ethnohistoric information is available, they are unlikely to ever know what sexual categories and terms were used by the people they studied," and even outsider-derived ethnographies can introduce bias or exclude certain practices and identities (Casella and Fowler, 2005, 69).

With training in the analysis of biological remains, bioarchaeologists can ask more dynamic questions when their work is conducted with the inclusion of mortuary data and exploratory theory. How did ritual impact the taphonomy of the grave? Did the circumstances of death influence the treatment of the deceased, consequently the process of decomposition? The dual-component approach to mortuary archaeology – that of studying biological and cultural remains – thus allows it to uncover how death circumstances affect the mode of burial based on the characteristics of the individual in relation to the community (Carr, 1995, Katzenburg and Grauer, 2018, 74). A biologically-focused subdiscipline more recently integrated with mortuary archaeology is archaeothanatology, the systematic study of disposition and processes of grave taphonomy (Duday, 2015, Gowland and Knusel, 2006). Archaeothanatology documents the changing nature of both the remains and their surrounding context to reverse the decomposition process and reflect how the grave was originally composed. This orientation of mortuary archaeology contributes to a more holistic understanding of the complex as it has been arranged and rearranged over time. Field observations are necessary to characterize the original body position, grave materials, and environmental influences in accordance to current preservation. Taphonomic assessment therefore provides the foundation from which to trace these changes and, by extension, the past events that led to the assemblage's decomposition. Ultimately, such information can be mapped onto larger-scale contexts and questions where archaeothanatological information becomes a vehicle for far greater scales of explanation.

Agency is another important component of assessing burial patterns. As previously noted, cultural practice is a primary determinant of skeletal condition. Skeletal assemblages – which can be range from fully intact and articulated to fragmentary, cremated, and commingled – are not randomly created (Katzenburg and Grauer, 2018). Neither are graves or their cultural contents. Rather, the entities of agency in the construction of assemblages and mortuary contexts are those participating in the burial. In life, personhood is derived from social connections, including relationships "between different individuals, individuals and groups, individuals and objects, and the living and dead, among others" (McClelland and Cerezo-Roman, 2016, 41). In death, such relationships direct the mortuary constructions of the living who symbolize and refer to the dead through burial creation. The activities of the living are thus integral to determining what evidence is available to the bioarchaeologist, and mortuary archaeology can help reconstruct the community's relationship to the dead, death itself, and ideas about the self. This is a more useful model than social persona, which has received critique for its largely interpretive and symbolic role in anthropological discourse. Understanding such lived relationships that constitute personhood, however, entails the understanding of population-specific, contextualized cultural belief systems and individuality.

This statement was demonstrated aptly in the cross-cultural survey conducted by Carr (1995). From the 1960s-1980s, American archaeology was dominated by materialist-ecological paradigms and positivist concerns of universals, directed heavily by Binford's cultural scholarship and processualism. Archaeology – and later, bioarchaeology – aligned to these paradigms, reflecting them in part through a fixation on status as inferred from

grave goods. As a result, there was a distinct lack of consideration for the impact of religious or philosophical beliefs in the symbolic development of mortuary contexts. A shift began in the 1990s to consider a more holistic focus on factors outside of hierarchical status constructs. Carr provided categories of influences from which mortuary features and funerary practices might be chosen. These include but are not limited to social organization, philosophical-religious beliefs, individual identity, and environmental features.

His analysis indicated that philosophical-religious beliefs and social organization were the most frequently referenced when features of the grave were constructed, although the individual and environment also had significant roles (Carr, 1995). All factors of burial, Carr concluded, were dependent on the beliefs and mortuary execution of individual societies, lending to the contextual focus that must be accounted for in any bioarchaeological inquiry. Consequently, "a holistic and balanced [multidisciplinary] view of the causes of mortuary practices, rather than a paradigmatic approach, is required… to interpret mortuary remains and to reconstruct the past from them" (Carr, 1995, 189). Mortuary archaeology, as a discipline, is concerned with understanding a past population's culture and activity as reflected in the mortuary treatment of the dead. As such, it is necessary to obtain all data of variation within a group to contextualize how various sociocultural factors influenced the skeletal assemblages and mortuary contexts accessible for study. While Carr contributed essential knowledge to the sociocultural factors influencing burial pattern, there was once again no recognition or description directly associated to the biological disposition of the buried within these graves.

In a holistic approach to mortuary patterns, bioarchaeologists are necessary to consider three components of past mortuary practice to interpret and understand the past: process (creation), performance (agents), and products (the interred and their grave). Bioarchaeologists can reassess how value was assigned in the past, meaning and materiality of graves, social memory, and communities of practice alongside the disposition of human remains (Heitman and Plog, 2015). The placement of objects in certain areas, such as burials, "have an underlying social logic, and these logics of depositional practice are one of the most important ways of understanding what was valued in the past" and the deposit-oriented approach can assess individual and group identities as well as memory (Heitman and Plog, 2015, 252). The narratives constructed from this knowledge can then be told in compelling, insightful ways. Ultimately, such a complex approach "will result in more accurate archaeological interpretations and more satisfying interactions in those interpretations" (Goldstein, 2016, 449). It is for the same reason that independent modes of investigation, such as paleopathology, may produce even more insight to the past.

Paleopathology – A Biological History

Paleopathology is a complex exploration of skeletal remains from a bioarchaeological context most accurately described as an assessment of life-long health, disease, and pathological experience in relation to environmental stress. Although inherently interdisciplinary, paleopathology was – as mortuary archaeology was – largely insular for decades, focused on the identification and classification of pathological conditions instead of disease process or lived experience. Many contemporary practitioners

of paleopathology incorporate knowledge and method from the biomedical and social sciences to study these experiences as interpretable from human remains. Paleopathology also assesses the differential bodily experiences of stress in individuals and populations through time and space, demonstrated by their skeletal pathological conditions. To accommodate the innumerable influences of physical well-being, a biocultural approach must be used, integrating data on human remains with diverse evidence from factors that impact human bodies (Grauer, 2012, Martin and Harrod, 2011, Buikstra, 2019).

The individual skeleton – or even the individual bone – is the basis upon which paleopathology is assessed. A biological profile has already been assessed before skeletal conditions, providing an individual's probable age, sex, stature, and other relevant biological features. An expansive list of pathological conditions can then be read from the remains, including (but not limited to) infectious diseases; fungal, parasitic, and viral pathogens; circulatory, metabolic, and endocrine disorders; skeletal dysplasias; congenital skeletal abnormalities; tumors; joint disease; dental disturbances; and more (Buikstra, 2019). It is necessary for the bioarchaeologist to be familiar with or have references to detect, identify, and interpret pathological conditions in opposition to normal human variation. Trauma, too, is considered a pathological condition and may be indicative of violence, lifestyle risks, or accidental harm. Techniques such as histomorphology, radiographic imaging, and ancient DNA studies have advanced the field to discover micro-pathologies or the pathogens themselves (Buikstra, 2019).

An essential aspect of paleopathology is the differential diagnosis of disease. This evaluation entails the alignment of all potential causes of a pathological condition, the

assessment of their common presentation in skeletal remains, and the elimination of unlikely diagnoses until only those with representative, manifested characteristics remain. Potentially, a paleopathologist will be left with several potential diagnoses, none of which can be eliminated or singularly confirmed as the causal source of condition. In these cases, probable diagnoses can be made, but an exact cause can often not be identified. It is also safer in many instances to only provide general groupings of causes rather than attempting to claim a particular disease or disorder is culpable (Klaus et al., 2017, Klaus and Lynnerup, 2019). The practitioner must also be aware of standardization of terminology, assessment, and detailed knowledge of disease processes in humans of past to fully understand the presence of pathological conditions in the bioarchaeological record (Buikstra et al., 2017). Poor preservation of skeletal samples also limits observation of pathological conditions even when the bone is still present, and these shortcomings must be accounted for (Katzenburg and Grauer 2018).

Paleopathology thus requires the deep understanding of skeletal responses, structure, function, and development. Manifestations of skeletal disease or injury can be unique to the individual. In the case of disease, for example, those who endure a pathogen for extended time may present different skeletal lesions based on disease severity or the immune response provoked. Environmental circumstances – physical and sociocultural – will also impact how pathologies interact with bone. Poor nutrition or the intervention of care can alternatively exaggerate or nullify certain aspects of pathological conditions, as they are directly related to the experience of biological stress.

Stress is perhaps the best mechanism through which to view disease, as the terminology of "health," "wellness," and "disease" are often misconstrued or viewed in typological absolutes (Temple and Goodman, 2014). Stress reaction, allostatic overload, or homeostatic disturbance are more accurate to define the interaction of the living body with its environment. In any setting, stress cannot be conceived of as simplistic or linear causes and effects. Rather, it is a series of interactions nested among layers of causalities related to the interplay of people with their environment, developmental processes, cultural constructions, and human action (Klaus, 2014, Klaus et al., 2017). "Health" itself is likewise amorphous, a composite of perceived well-being and function. Similar to mortuary archaeology, paleopathological studies attempting to reconstruct the consequences of biocultural complexity often lead to typological paradoxes. Labeling individuals as "high status" or "low status" may be based on the presence or absence of grave goods, and the categorization of "healthy" or "not healthy" may be made due to the presence of certain pathological conditions or a different frequency of visible illness associated to certain "status" groups. "The reality of stress and social organization are far more complex than these categorical treatments, and significant progress in theoretical development is needed for the continued growth of bioarcheological research" (Temple and Goodman, 2014, 189). Paleopathological markers are therefore best viewed as products of stress that disrupt systems of the skeleton rather than a simplistic indicator of well-being, while variation may be referred to as relative health, not "health" or "illness."

Paleopathology can therefore make strong statements about the past of human societies. With accurate representative sampling, paleopathological analysis can make

strong postulates about population health experience and thus the relative well-being of the individual. The discipline also seeks to understand the relationship between behavior and health, and this pursuit can develop a narrative about of how disease was or was not mediated in human history. Broader theories about cultural adaptation, resilience, and stability are also considered (Marden, 2011, Temple, 2019, Agarwal 2016). Research in paleopathology often focuses on the natural history of disease or human-ecological interactions, but dimensions of the human biocultural condition are equally as fruitful. These interests have increasingly intertwined the discipline with general bioarchaeology, as it integrates similar, contextual interpretations of stress alongside culture (Blakely, 1997, Marden, 2011, Zuckerman and Martin, 2016, Toyne et al., 2020). Orientations of study also include paleoepidemiology, social roles and identity, structural violence, disability and care, and individual life history. Many of these themes can be addressed by the synthesis of paleopathology and mortuary archaeology. One to consider in isolation is paleoepidemiology.

On its own, epidemiology studies incidence, distribution, prevalence, and potential mediation of diseases or other health factors. In paleoepidemiology, inquiry is directed on the historical record. Epidemiological studies are biocultural to begin with, because physical as well as social factors direct the instance of disease in a population. It is from this philosophy that paleoepidemiologists have come to explore the topics of embodiment and social epidemiology.

Embodiment theory seeks to understand how the conditions of existence, life experience, and environment are documented by bodily condition and the social-biological

interactions therein. In paleopathology, this pursuit is conducted through the evidence of disease or indications of individual stress responses (Kreiger, 2005). Embodiment is what allows paleopathology to manifest and be assessed, as the state of skeletal remains contains the reactions to certain external conditions. Pathologies therefore indicate a multiplicity of environmental circumstances (Kreiger, 2005). An example of this may be infection from an identifiable zoonotic disease. If a skeletal response indicates the presence of such a pathogen, it can be inferred that the environment not only contained the disease but also the factors (e.g., pastoral animals) necessary for its existence. Furthermore, a paleopathologist can infer the individual interacted with certain economic frameworks and patterns of human-environment relations (e.g., animal husbandry) to then acquire the disease. A different example may be the evidence of repeated injury related to abuse or structural violence. The story of both violent experience and survival is embodied by the individual who experienced it and survived (or not). Distinct biocultural statements can therefore be made from the skeletal embodiment of human behavior.

Embodiment theory recognizes humans as simultaneously social beings and biological organisms, their bodies as active and engaged entities. Bodies biologically incorporate elements of their societal and ecological environment while actively shaping it. Embodiment studies also seek to explain why and how multilevel processes are skeletally embodied by human populations in patterns of health, disease, and wellbeing, culminating in variable skeletal disposition (Kreiger, 2005, Klaus et al., 2017a). The compelling claim of embodiment then is that bodies tell stories about their lived

experience, culture, and world, made by both conscious and unconscious processes and distributed differentially through a population (Kreiger, 2005).

A similar biocultural or bioarchaeological approach exists in what is termed "social epidemiology." This is a branch of epidemiology that prioritizes the effects of social factors on health status in a community, assuming the distribution of relative "health" and stress reactions reflects the advantages or lack thereof experienced by each person (Gravlee, 2009, Krieger, 2018, Toyne et al., 2020). Social epidemiology and theories of embodiment are easily integrated into paleopathology. All these philosophies rely on skeletal remains to read how the human environment is imprinted or embodied in patterns of biology or health outcomes. Embodiment and social epidemiology are further applicable to studying identity and social organization as they interplay with disease.

Biological and social interplays necessitate a holistic biocultural practice. The multiple avenues of evidence involved in such inquiry negate a proclivity to bias that occurs in the absence of contextualizing data. Theories from social sciences and humanities are essential to extrapolate cultural information about graves and the life stories within them. Knowledge about biological health is enhanced through that of sociocultural factors, and vice versa (Buikstra et al., 2017). This exact benefit is why "a growing consensus seeks to explore how to narrow the traditional divide between of paleopathology, bioarchaeology, and mortuary archaeology" (Toyne et al., 2020, 10).

Synthesis in a Contextualized Biocultural Approach

The synthesis of mortuary archaeology and paleopathology is a natural means to achieving a more holistic view of the bioarchaeological record, resulting in a more accurate story of the human past. Both specialties connect human skeletal biology with cultural behavior, material intervention, and social constructs. Integrating the condition of the body as it was living (paleopathology) with the material dimensions of burial (mortuary archaeology) increases our understanding of the person and how their life may have influenced the circumstances of burial and assemblage – both skeletal and mortuary – that remains. This is best illustrated by how each independent line of evidence and analysis informs the other while negating its weaknesses. Examples of such studies in action are given in following sections.

A Relationship Between Disciplines

The early processual handling of mortuary archaeology mischaracterized the contexts and contents of burials, divorcing the grave from the interred. Likewise, a medicalized, purely biological inspection of remains can divorce such data from its mortuary context and erases much of the cultural-behavioral record. Mortuary archaeology can provide vital information to contextualize disease through particular symbolism or burial methods associated with certain pathological indicators (Martin et al. 2013,). Life circumstances, or the social personae indicated by mortuary treatment, are also large components of maintaining relative health. An apt – though later critiqued – example is how social position impacts health outcomes due to differential access to resources,

medicine, or care. The situation and construction of cultural circumstances influence the biological outcomes of individuals and thus groups differentially impacted by stress (Klaus et al., 2016). A correlation might therefore exist between biological stress indicators and social status based. Social position also may direct aspects of burial complexity. Mortuary archaeology can therefore test the status-assessment made from paleopathological analysis or inform the anthropologist as to how status symbolized in the grave did or did not lead to differential exposure to stressors.

Paleopathology also informs mortuary archaeology. Whereas mortuary archaeology reconstructs the ways bodies and graves were treated and provides insight to the relationship between living and dead, paleopathology offers knowledge about stress responses and other biocultural features of the skeletal that reflect embodiments of the quality of life. Biological profiles can elucidate why certain mortuary treatments or contexts are associated with individuals or certain groups (i.e., by age, sex, gender), but paleopathology can expand upon these connections by examining how the experience of stress (producing pathological indicators) may have also influenced life experience and burial treatment (Marden, 2011, Buikstra and Roberts, 2012, Klaus and Ortner, 2014). "The presence of a pathological condition may influence the way that the living choose to treat a body at death," such as the choice of cremation for those who suffered from infectious disease (Marden, 2011, 188). Does a victim of abuse, for instance, receive the same mortuary care as someone who does not exemplify mistreatment? Are the diseased buried with symbols of their ailments or care? Paleopathology can uncover why certain forms of burial were chosen, both individually and socioculturally.

This synthesis also avoids descriptive texts. Early paleopathology and mortuary archaeology were mainly descriptive, a major detriment to answering important or compelling research questions. Accurate stories about human history were also obscured by the separation of physical and cultural attributes within research. In the past fifty years, however, bioarchaeologists have begun to replace descriptive studies with analytical ones (Fuentes, 2010, Larsen, 2010). This shift has improved the quality of work conducted as it abides by the philosophy of contextualized, informed research and challenges the practice of typological or essentialist literature.

Population and Variation – Considering the Community and the Individual

Population-scale assessment and the documentation of variability also benefit from this synthesis. A survey of pathological conditions alongside mortuary archaeology broadens the understanding of populations. Social structures are incorporated into burial patterns, and skeletal data can independently assess and align its inferences with the symbolism of funerary practice. Mortuary archaeology, paleopathology, and biodistance data can also be integrated to illustrate population structures and their relationship to stress exposure or mediation (Martin et al., 2013, Klaus et al., 2017a, Klaus et al., 2017b). These methods can also be aligned to assess the environment and broader biocultural context, including adaptation or occupational and labor roles (Blakley, 1997).

In the same vein that paleoepidemiology explores the incidence and impact of disease, a population-wide inspection of paleopathology and mortuary archaeology can identify correlations or interplays on a community scale. The complexity of mortuary

practice can then connect certain grave features with factors of the human condition. It is important to note that thorough documentation of complexity requires historical and regional context, as these may direct interpretations about the meaning of certain burial practices. How, for instance, does a certain culture understand and thus react to a particular disease? Intentional variation can also be ascertained through this lens, as the different pairing of factors or inconsistency will infer the individual treatment of graves. Even if two individuals demonstrate the same pathological indicators and similar biological profiles, the features of their burial may be disparate. This difference indicates a less patterned mortuary behavior and a compelling study for individuality.

Burial goods and remains are both inseparable from the reconstruction and analysis of the individual and group identities. A skeletal assemblage and its context are integral to a reconstruction of personhood based on identifying lived circumstances from the materiality of the body and grave, as per the philosophy of embodiment. Cultural relationships held by the individual or their interactions with the physical world can also be signified in the burial assemblage and their pathological disposition (McClelland and Cerezo-Roman, 2016). A mother responsible for agricultural labor may demonstrate the characteristic stress indicators of her multiple roles, and the symbolic treatment of her grave – with indicative goods, or burial location equidistant from the family home and garden – will have a preserved life history that is not likely to be repeated in another grave unless life experiences were very similar (Yaussy and DeWitte, 2020).

Bioarchaeology has begun to adopt more contextualized individual-focused approaches, as seen in revisiting the approach of osteobiography. When done properly, this

tool considers in depth the biocultural profile to reconstruct one person's embodied life course, often prioritizing skeletal indicators of age, sex, health and disease, and occupation or labor roles. Embodied experiences are one of the chief aspects of understanding ascertained through the individual grave. The biological may then be combined with the archaeological context to infer life experience and craft an osteobiography. By considering mortuary archaeology alongside the biological profile and paleopathology, the researcher "gains insight into the specific ways in which personhood could be constructed or negotiated through social interactions" (McClelland and Cerezo-Roman 2016, 47). Additionally, such life history or osteobiography analysis situates stress reactions in the greater life course of an individual and helps improve demographic reconstructions (Toyne et al., 2020). Synthesizing mortuary archaeology and paleopathology is therefore paramount for constructing a holistic identity.

Considered together, then, these approaches illuminate the lives and deaths of a population and the individuals composing it. But, in application, does this synthesis uncover a more accurate history in bioarchaeology? In what ways is it currently applied to accomplish such a goal? And what new directions does it appear to be taking or need to take if this goal is to be met?

Self-Imposed Limitations in Processual "Status" Studies

The practice of mutually applying mortuary archaeology and paleopathology is not altogether new. However, its selection of data, application, and interpretive scope has expanded in the past three decades. As previously explained, an early emphasis on

descriptive texts led to a diminished production of theory or deep narratives when assessing paleopathological conditions and mortuary patterns. A trend towards analytical work reversed this proclivity, but narrow subject matter still dominated the field. Historically, the translation of this data into stories heavily prioritized the reconstruction of hierarchies from the mortuary record. Hypotheses involved how typically vertical "status" impacted past health outcomes and burial variation. While this practice did not intentionally produce falsehood or misinterpret data, it often reduced the factors of variation into distinct groups already presumed by the anthropologist.

Status studies almost invariably told the story of the "healthy, wealthy elite" and the "sickly, destitute poor," whether the latter be average citizen, laborer, or slave. Most research considered pathologies of stress and potential resource deprivation (linear enamel hypoplasia, periodontal disease, periosteal reactions, and activity-related indicators) in relation to quantities and qualities of grave furnishings or other aspects of the grave environment, location, and elaboration. The exclusive search for strict boundaries and strong patterns in the bioarchaeological record has led to some one-dimensional representations of social structure, which is typically complex and multivariate (Marden, 2011). These studies occasionally referenced known ethnohistories or ethnographies to contextualize their claims, but others made more generalizing statements about the haves and have-nots of a population without accounting for the complex interplays of environment, human interaction, and relative health. Hypotheses and conclusions were thus made from assumptions about how societies operated. Processual archaeology,

unmediated by its theoretical descendants or counterparts, can still produce work of this manner.

Carr's (1995) survey, previously referenced, explored the limitations of considering only status in the mortuary record. This survey of mortuary ritual demonstrated that many aspects of culture influence mortuary practices and the deposition of remains. Indeed, in an earlier survey of ethnographic mortuary systems, it was proposed that "the use of material inclusions to signify status distinctions was a decidedly minor practice, used in less than 5% of all cases" (Tainter, 1978, 121). In Carr's study, non-status factors included belief systems, individual death circumstances and identity, and environmental features. Multiple factors differentially influenced each aspect of mortuary practice between cultures. The most frequently influential factors were philosophical-religious beliefs, followed almost equally by horizontal and vertical status; secondary influences included physical and circumstantial context (Carr, 1995). Carr's findings aligned with a growing postprocessual critique that challenged the canonical belief in American mortuary archaeology that social organization was the exclusive primary determinant of mortuary practice. These findings encourage bioarchaeologists to be conscious of other cultural influences on mortuary contexts. It is thus necessary to understand how non-hierarchical social organization, belief systems, and other cultural philosophies relate to mortuary practice when reconstructing taphonomy or culture.

Alternately, cultural beliefs and values may independently influence the burial in terms of physical or circumstantial factors (Carr 1995). Some factors, such as specific modes of body treatment or disposal, can be independent of social context but dependent

on religious or philosophical beliefs. Variation in burial type also has the potential for reconstructing world views and beliefs or may be confirmed as symbolic of such beliefs if ethnographic evidence is available. Carr (1995) found that philosophical-religious factors were most often to determine the general execution of mortuary practice and the treatment of individual remains. These factors included beliefs about the soul, the afterlife, the nature of the soul's journey to the afterlife, universal orders and their symbols, the cause of illness and death of the deceased, and responsibilities to and punishments of the deceased's soul. Features indicative of philosophical-religious beliefs exclusive of identity included body orientation, body position, and the spatial arrangement of grave materials, demonstrating a multitude of burial procedures that were not aligned with status.

Inferences can also be made about the larger construction of the community. Carr (1995) stated that factors of burial indicative of social organization included the internal organization of the cemetery, the overall energy expended on disposal, the number of socially recognized burial types, the number of persons per grave, and the quantity of grave furniture. It was essential to not assume that the preserved goods were explicitly indicative of social status. Lineal descent group (a type of horizontal social position) was a frequent determinant of grave location and cemetery demarcation; regional cemetery locations were more indicative of religious beliefs (Carr 1995).

In his discussion, Carr (1995) extrapolated on the impact of the individual, both those who are buried and those who do the burying. Non-hierarchical social personae attributes included age, gender, horizontal social position, personal identity, and social classification at death. These did not manifest without the agency of the living. Mortuary

practices related to identity – the social persona that exists in the grave – are filtered symbolically through personal intent and belief, delineating how identity is coded in burial (Carr, 1995). Identity construction in the grave can be reinterpreted and revised by the agents of burial, leading to products of social or personal strategies relative to beliefs and social dynamics. These are never a passive assumption of patterns, and the bioarchaeologist must consider the impact of such agency.

Work by Robb et al. (2001) critiqued the simplification of status to the correlation of biological stress markers. The researchers gave a set of preconditions for archaeologically establishing relationships between health (based on skeletal data) and status (based on mortuary treatment). Stratified difference had to occur during life in the form of lifestyle, stress exposure, nutrition, activity level, and risk. These differences would have to be skeletally indicated, as well. Segregation of differential treatment would also need to appear in the mortuary record. Therefore, status studies could only be conducted if a population was a stratified hierarchy with statistically significant correlations between distinguished burial types and pathological patterns. Many assemblages, they argued, lack such distinct divisions (Robb et al., 2001).

Using data from an ancient Italian cemetery, Robb et al. (2001) scrutinized the relationship between individual biology, activity, and social identity. The interplay of these factors was complex in that childhood nutritional stress indicators were unrelated to social status indicators, while activity and adult life occupation indicators were hypothesized to be more related to mortuary status symbolism. Some biological indicators considered typical of “stress” or biological status (i.e., linear enamel hypoplasia, cribra orbitalia, and

adult stature) had no statistical relationship to social status. Others associated to activity and stress in adult life (i.e., trauma, Schmorl's nodes, and periostitis) covaried with grave goods, potentially indicating divisions of labor and identity. No direct, systematic relationship between indicators of biological stress and social status was identified. The study confirmed that variation existed beyond a simplistic health- and social-status to burial model. Robb et al. (2001) concluded that simple correspondences between biological and social "status" should be traded for a nuanced interpretation that could provide a more detailed history of populations. They also encouraged a nuanced reading of biological and social "status" indicators to avoid the self-fulfilling prophecy of simple correspondences and hierarchical interpretation, as most communities operate in a more complex way (Robb et al., 2001).

The American Southwest was no exception to the "status" seeking trend. As what has been called "a training ground and laboratory to some of anthropology's most prominent scholars," this region experienced the earliest (and most crude) forms of mortuary excavation as well as analytical study (Martin et al., 2013). Research focused on identifying and delineating the contents of "elite" burials, sometimes entirely neglecting those without rich grave goods or elaborate burial contexts. Some elites received special osteobiographical treatment, but this method of identification again elevated their titles as "Magicians," "Leaders," or "Warriors" at the expense of individuals not given the same mortuary treatment (Kamp et al., 2016). This focus persisted in more recent years with the amplification of integrated techniques, but some inquiry still does not incorporate the

newer approaches of identity or individual embodiment to assess contextualized symbolism.

Early analysts in the Southwest sought universal themes that could be traced through mortuary and biological evidence, but such techniques have been progressively abandoned as inadequate and simplistic (Martin and Akins, 2001). Such research often ignored remains and burials that did not conform to assumed patterns, preventing the examination of all variation while prioritizing normative data. The technique led to homogenization that was antithetical to seeking human variability, as the discipline of bioarchaeology pursues. These early assumptions still strongly influence analyses – historical data biases have been reified by interpretative bias, establishing a model of "normative" mortuary behavior that persists in the analysis of bioarchaeological data from the Southwest (Marden, 2011). "Variations in Chacoan mortuary treatment," Marden states, "may be best understood through a fine-grained re-examination of the condition of the remains and the health of the individuals represented within the mortuary context as a whole," and she conducts such research, referenced in a later section (Marden, 2011, 85).

Recent work has legitimized some status conclusions using ethnohistoric belief systems and philosophies outside of assumed hierarchical theories with independent evidence from radiocarbon dating and mortuary material distribution (Plog and Heitman, 2010). Further lines of evidence from demography, nutrition and biomechanics studies, pathology, and trauma were referenced to accomplish similar research interests (Harrod, 2012). Other research, however, has started to explore status without limiting the conclusions to finding correlations. Gomez examined the data of Hawikku, an Ancient

Pueblo society, using data from previous bioarchaeological studies on the skeletal population. This data set indicated lifelong health status was generally poor, and that neither sex nor social status, as inferred from mortuary treatment, insulated a person from such a biological experience. A comprehensive review for osteoarthritis also provided no evidence to suggest "high status" individuals had significantly lower prevalence of the disease than did "low status" individuals (Gomez, 2009). Gomez's synthesis thus assessed potential social divisions and their associated outcomes but found no distinct correlation between certain stress experiences and the potential of status differences, supporting previous work with this population by Stodder (1990) and Howell (1994). Gomez (2009) concluded that individuals may have had multiple status identities that exposed them to stresses through shared, overlapping activities or labor roles.

These studies confirm that many of the biological and cultural data present in a mortuary setting – by extension, the relationships to be viewed through bioarchaeology – are not exclusively linked to or determined by status. Interpretations to be made from the synthesis discussed presently are much more varied than hierarchical status studies can achieve. The theoretical re- and deconstruction of status studies is continued through current work in the Southwest. Exemplary research projects are also developing beyond the unilateral assessment of hierarchies to address more complexity in the mortuary record as well as the past populations that created it.

Expansions: Exemplary Case Studies in the Ancestral Southwest

Reviewing some of the more holistic studies of the Ancestral Southwest demonstrates how the synthesis of mortuary archaeology and paleopathology can and should operate in bioarchaeological research. The new agenda includes novel philosophical approaches and applications using recent or revised models of bioarchaeological knowledge production. Techniques from current mortuary archaeology and bioarchaeology practice are used to explore community experience, interaction, and individual variation in relation to the greater community. Many of these are being enacted in research on the historic Southwest, producing countless stories to the history of past occupants whose descendants still populate the landscape.

The expansiveness of study in the Southwest is in part due to its expansive excavation and collection. Bioarchaeologists have assembled vast data sets on the mortuary behavior, paleopathology, and paleodemography of Ancient Pueblo skeletal populations. Extracting the relevant information from these extensive collections, new projects have explored topics of symbolism and grief, social systems or roles, embodiment, and identity. All trajectories provide examples of effective, informed analysis. Providing a highlight reel of these subtopics is reductive to the array of work done in the region and discipline, but its breadth can be illustrated by starting with population-based projects and ending with narratives that are the most individual.

Symbolism and Grief Studies

Gamble, Walker, and Russel (2001) studied Chumash mortuary and bioarchaeological data with the premise that ethnohistoric accounts could establish a code for mortuary symbolism that may then contextualize the biological record. The project is a thoroughly detailed cross-assessment of mortuary goods – interpreted through ethnohistory – and biological data on genetic relatedness and health status to hypothesize social organization. Nonmetric dental traits showing familial inheritance were the basis for inferring genetic relationships among kin-based Malibu cemeteries. This was an independent line of evidence to confirm the relatedness of people with similar characteristics of burial. Some spatially and genetically affiliated groups were able to afford or chose to bury more items with their dead. These factors correlated to the potential status-influenced or kinship-clustered appearance of pathological conditions among the population. Biological results confirmed the horizontal (perhaps vertical) distinctions seen in mortuary practices between grouped graves, illustrating the necessity for additional context of behaviors and relatedness. Accurate inferences, as before stated, require the mutual confirmation of mortuary and paleopathological data.

Macdonald (2001) focused on the concept of grief by analyzing burial goods, supposing that a higher intensity of mourning may differentiate the type or number of items placed in a grave. Macdonald hypothesized grief and mortuary treatment vary on a scale of mourning practice based on the individual's relationships and the experience of grief from those left behind. This variation was possibly linked to the sociocultural value of the individual or circumstances of death (i.e., long-term suffering, sudden or brutal fatality).

The study found Southwest young adult burials tend to contain larger quantities of grave furnishings. These assemblages may indicate grief over unlived life and wasted potential as young adults are becoming a recognized, productive, and unique individual in the society. It may also relate to the unexpectedness or unnatural timing of their death, during what many societies view as the prime of vitality, as unexpected deaths are often associated with severe disease or fatal trauma. Grief also escalated with biological relatedness, as independently assessed from similarities of mortuary practice among kin-affiliated graves.

Social Systems or Roles

To expand on the social dynamics of a variable society, Martin and Harrod (2016) assessed skeletal condition indicative of stressful conditions but also survival and adaptation as influenced by cultural behavior. Cultural ideology, activities, and structures, they argued, are written on the skeleton through pathology. Such biocultural processes included social systems of "gender, identity, class, oppression, inequality, occupation, geography, diet, ancestry and ethnicity, and violence" (Martin and Harrod, 2011, 163). How disease, injury, or another condition expresses sociocultural factors could thus be aligned with mortuary archaeology to assess the systems and roles of a population.

They explained further the impact of time on these processes. The experience of biological and social stresses (as well as their respective responses) constitutes either short-term pain or long-term suffering in lived experience. Pain and suffering can be correlated with the treatment of the body in adverse circumstances, such as abuse or slavery or the necessity of extended care. A compelling example was seen in burials from the La Plata

river valley. Several young adult females exemplified recurrent cranial trauma and the pathologies of hard labor. It was hypothesized these individuals suffered from physical violence and abuse in acute acts of harm as well as chronic labor exploitation. Their deaths were characterized by unprepared burials, void of grave goods or careful treatment to the disposition of the body. Mortuary archaeology thus corroborated the narrative of the skeleton to express the difficult, violence-ridden lives of these women whose graves had been constructed without any evidence of care.

Estimations of pain and suffering such as that contained in this work illuminate past life in a meaningful way, especially in terms of demonstrating survival and adaptation even in adverse circumstances. Paired with the mortuary survey of the community, a contextualized cultural and population experience may also be built. The exploration of social roles is near the osteobiography or life history approach in its illustration of individual stories in a nuanced, specific way while also considering group experience, such as those of the mistreated female laborers. The appearance of trauma alongside certain burial contexts is useful for interpreting stories of conflict or mistreatment (Akins, 2001).

While conflict (violence) is one result of social structuring, cooperation is another. On the opposite end of this spectrum, and closer to the status studies of old, Harrod, Martin, and Fields (2017) tested hypotheses on the Pueblo Bonito burials of Room 33, the most "rich" grave site in the largest Great House of the Chaco Canyon complex. Exemplary treatment and wellness were deduced from the disposition of the elite burial. Their analysis contextualized archaeological settings, burial treatment, biological profile, and osteological trauma and health indicators to consider the dynamics of social interactions.

At the base of this cemetery, two individuals with direct association to "thousands of grave goods that included ceramic vessels, baskets, lithics, worked or polished stones, ceremonial sticks, flutes, wrapped reeds, and numerous shell and turquoise beads and pendants" are buried (Harrod et al., 2017, 6). Based on their location and biological relatedness to a group assessed to be more advantaged, the researchers identified these individuals as highly regarded male members of the Chaco community. This portion of the larger Chaco sample displays higher stature, overall lower instances of porotic hyperostosis and nutritional constraints, anemia, and trauma, and their grave furnishings perhaps indicate higher achieved status. The demographic, pathological, and cultural association made to this larger group supported the idea that highly furnished graves may have related to higher status positions. Ethnohistory was also considered in the assessment that these individuals were potentially social or ceremonial leaders based on the mortuary symbology of turquoise, a major material good at Pueblo Bonito and a potential ritualistic offering.

Embodiment and Identity

Embodiment theory has a natural alignment with the multidisciplinary mortuary-paleopathology axis, but it is valuable to see in practice. Embodiment supports the notion that paleopathology can show comprehensive outcomes of physical and social circumstances on the body. This function supports mortuary archaeology and reinforces its translation of mortuary data to social and biological contexts. Embodiment (as burial) is functionally developed from interplays within a particular time and place, and it is differentiated in expression by culture, bodily practices, conventions, and resources

(Krieger, 2005). Closely related to embodiment is identity. Individual personae and traits are incorporated into living biology and mortuary features of the deceased. Biological and social identities are inseparable, just as the buried body and its burial context (Martin et al., 2013). The intuitive bioarchaeologist can assess some living identities in the biological profile, pathological indicators, and the mortuary context.

In this way, McClelland and Cerezo-Roman (2016) explore identity from mid-1800s Native and Hispanic remains in Arizona, using embodiment theory in a more contemporary population. Bioarchaeology, they argue, is inextricably concerned with the reconstruction of past identities. The discipline involves the characterization of past individuals or groups in life, but it also transforms the dead, (re)creating identities and stories for a modern, living audience. "The process of identity reconstruction may be considered a re-embodiment of the person" (McClelland and Cerezo-Roman, 2016, 39). Cerezo-Roman (2015) also considers the existence of personhood as it is understood over time and is represented by mortuary treatment. This research uses the mortuary remains of past populations to understand concepts of personhood were constructed through burial and treatment of human remains, namely in relation to inhumation. Questions for exploration included how expression of personhood varied over time and between individual mortuary treatment, positing whether variation was representative of how personhood was recognized over time (Cerezo-Roman).

Reconstructed identities depend on the preservation of the body and the final disposition of remains alongside associated objects. In the process of reconstruction, then, individual identity (or identities) may be transformed by the changing context, as resulting

from grave taphonomy – advanced decomposition or the destruction of features can alter interpretation. Aspects of identity might be lost, reoriented, anonymized, or merged with others into a group identity. It may also be said that the particularity or evidence of identity varies based on larger societal norms. More structure-conscious societies may result in its constituents being symbolically represented by the social categories to which they belong rather than personally unique characteristics, and this can further obscure more particular identity in the practice of mortuary symbolism (see Carr, 1995).

Marden (2011) provides a final example for the merged analysis of the biological profile, paleopathology, and dynamic burial context. Identity, as noted, can be obscured by grave taphonomy or disruption. Most bioarchaeology is unfortunately dependent on the condition of remains. Discrepancies in the bioarchaeological record can lead to misinterpretations or the inability to make connections. Many assemblages of remains are incomplete, lack discrete grave context, or are disturbed (naturally or by human conduct). They may also not reflect the expected correlations between factors, as when estimated sex does not match the observer's interpretation of "gendered" grave items (Katzenburg and Grauer, 2018). Southwest graves and their occupants were often disassociated in this manner by poor or unprofessional excavation. Using a hybridization of bioarchaeological and forensic techniques, Marden reassociated skeletal assemblages of Chaco Canyon individuals to their burial contexts. The project analyzed the interrelationship of health status, social structure, and mortuary rites to understand how individuals lived and were treated after death. Other lines of evidence included archival records for provenience, positioning, and grave goods for each individual to reconstructs mortuary practices and

identify spatial, temporal, demographic patterns in treatment. Marden's inferences included how remains were deposited, conditions and disturbance they endured, burial population demography, and information on grave good disparity. Osteological and paleopathological data conferred identity and experience. The manner in which an individual's body was treated (or lack of treatment) at death helped enrich the understanding of mortuary behaviors and their cultural significance, contributing to a more nuanced understanding of mortuary ritual and interactions. This study provides yet a new extension to the synthesis – using forensic knowledge to realign mortuary and biological data so further cross-examination can occur.

Life History

Burial and skeletal evidence may indicate certain biocultural roles or identities, such as age, sex, gender, ethnic identity, marital status, parity, or affiliation to groups such as family or clan (Marden, 2011). These variable factors of lived experience often times also indicate dissimilar life histories, based in part on biological circumstances and part in social environments that co-produce the body in a cumulative process over a life cycle. A "life history" model analyses human life events over the life cycle from an evolutionary perspective to consider developmental, reproductive, and survival strategies from conception through death (Temple et al. 2011, Temple, 2019). Life history recognizes that the process of living and embodying experience is both constant and cumulative, and biological "trade-offs" occur to enhance survival in the present moment. Life history also acknowledges biological resilience and constraints.

Material culture, too, can be associated with the human life course, drawing together the lifecycles of people and things, often encultured with ontologies about life cycle or stages (Gilchrist, 2004). In considering the life history interpretations of pathological conditions, mortuary archaeology may lend context to the sociocultural forces acting on the individual. Can an individual with developmental stunting in height, advanced arthritis, and evidence of repeated infections interred near a large agricultural plot with items associated to farming help support the hypothesis that this person experienced stress from conception through their adulthood as a physical laborer? Considering both biological and social factors and their co-production of developmental problems or disease requires bioarchaeologists to consider issues, such as nutritional status and its impact on overall health status, the ability of individuals who may have underlying health problems to resist other infections, and the position of our study populations within the larger economic sphere. These are all topics explored in a life history model. In contrast to a normative approach, acknowledging mortuary variation, paleopathological variation, what factors may influence them, and how they were rendered over the course of a lifetime, re-examining the individual within the context of the population is more informative. How does the relative health and relative burial circumstance of the potential laborer compare with a person whose body reflects similar exposure to pathogens, but no chronic or developmental illness? Life history frameworks, as a relatively new approach, are just beginning their transformation of analyzing the lived experiences of bioarchaeological populations.

Colonization

The impacts of colonization on body and culture cannot be overstated. Its impacts on the paleopathological and mortuary record, then, may be indicative of specific colonial experiences. The biological remains and material culture may demonstrate resilience and resistance to colonial or missionary structures within the grave (Wilcox, 2009, Murphy and Klaus, 2017). Studying the ideology expressed through Indigenous material culture and burial practices – individual as well as collective – can indicate experiences of colonial interactions (Hall and Silliman, 2006). Changing, hybrid burial practices or heightened expressions of local identity during periods of conflict and subjugation may reveal the maintenance of tradition and identity. Why funerary custom changed, the social implications of funerary treatment regarding attitudes about the dead, body, and community, and continued mortuary customs relate to ideas of remembrance, collective memory, and cosmology that may shift during periods of colonization (Cerezo-Roman and Watson, 2019). "Inhumation internment customs," for example "represents more than a shared commemoration of the dead and the transition/liminal period; it was also a way to create collective memories and remembrances" (Cerezo-Roman and Watson, 2019, 16). Higher instances of mass burials or unfurnished graves (in comparison to ones that previously framed ideologies) may alternatively translate the constraints of sustained life or practice within an Indigenous community.

Alongside the assessment of changing or maintained burial traditions, the relative health of individuals before, during, and after colonization may indicate similar patterns of resilience or resistance. Groups experiencing the undeniable violence of colonialism may

exhibit shifts in their development and life history, injury, infectious disease loads, and other generalized stress indicators. Trends in such evidence may indicate the biosocial circumstances of forced labor, physical violence, malnutrition, and disease exposure that were common in colonial dynamics between settler and Indigenous communities. The alignment of this data with shifting mortuary patterns reveals vital information about the experience of colonization. Mortuary practices may remain consistent as paleopathological evidence demonstrates higher biological stress. Rather than fixating on the increase of pathological conditions in a colonized population, a dualistic model of inquiry can acknowledge the extent of colonialism and genocide while also recognizing the resilience, resistance, and survival of Indigenous cultures within their communities.

The Ethos of Holism: Benefits of a Hybrid Discipline

This extensive review of past and current practices of mortuary archaeology, paleopathology, and their synthesis has demonstrated the research benefits of combining these subdisciplines. The ultimate purpose of binding the two disciplines is an ethos of holism, developed from the classic biocultural hybrid ethos of anthropology that have operated in research on biocultural populations and a biocultural past. Combining the histories of sociocultural data from mortuary archaeology and biological data from paleopathology, bioarchaeologists can attain the most accurate, holistic, and meaningful understanding of human history.

While there is not an ethical dilemma with physical anthropologists or archaeologists who work on only one aspect or subset of data, singular lines of evidence

can never provide a full or complete picture of the past, and larger assessments of populations or individuals are unlikely to be holistic in nature (Buikstra and Beck, 2006). There is great potential for the circumstances of a grave to have significance and interpretability to an individual's life, their relationships, identity, social memory or meaning, and experience of biological stress. For this reason, the mortuary archaeological past should not be divorced from its associated biological remains. Even the term "bio-arch-aeology" entails this implicit marriage of evidence.

Mortuary archaeology in concert with paleopathology provides the duality of life history and burial history that is integral for holistic bioarchaeological research. An assemblage of bone within its grave will reveal the biological experience of an individual while also embodying the cultural history of the grave itself. In relation to the biological record, skeletal assemblages are arranged and modified in myriad ways from the event of their deposition until their discovery. Remains record this history through their physical disposition and taphonomic profile. In the cultural record, the remnants of all materials associated with the skeletal assemblage as well as the grave itself can provide insights on the culture that created it. Mortuary practice in a society determines where, how, and with what people were buried, so such characteristics of a grave are invaluable to understand the manners of burial for a particular group of people at the time a grave was made.

It is also evident from the most recent survey of research in the Southwest that bioarchaeologists are increasingly treating the human subject with human particularity. Variability and individuality still need to be considered as the biocultural synthesis moves towards deliberation of the singular to better understand the variation of the multiple.

Formal theories tend to focus on classifying variables that consider variation to be idiosyncratic rather than reflecting the embodied peculiarity of individuals. Truly comprehensive classifications would yield grave types represented by only a few or even one grave (Tainter, 1978). This paradox of categorization means the bioarchaeologist must be critical about typology, the search for norms, and ideas about burial cluster. Such precaution avoids the assumption that an assemblage of sampled graves represent the "cumulative dead of a specific social group community, village, or urban neighborhood. The term 'population,' as in 'population health' requires critical review and explicit definition" (Buikstra et al., 2017, 82).

Human remains should always invite engagement with social theory, though this was not the case for decades. Archaeologists often marginalized the skeleton as uninformative, and biological anthropologists envisioned them as purely data sources for evolutionary biology, discrediting too the evidence of material culture. Sociocultural frameworks uncover deeper meanings of individual identity alongside paleopathological data to connect diseases to lived experiences unique to a singular body. Approaches involving gender and sexuality further contribute to ideas about disease patterns, ideology, social structures, and embodiment. Such theoretical orientations may also help bioarchaeologists understand how identities formed and contributed to cultural practices which may have induced differential health and disease (Toyne et., al. 2020). These are the new implications for individuality in this synthesis, preceding population analysis.

Individuality is also dependent on relationships, and dynamic population studies benefit from holistic methods of study. Cultural modes of individual interment are complex

and responsive to numerous factors (Martin, 2010). The phrase “the dead do not bury themselves” necessitates the researcher contemplate how kin and other social relatives create the burial context (Buikstra et al., 2017). Comparisons of grave items, burial construction, and positionality can also be invaluable sources of information on what was chosen by a community as compared to the common funerary preferences of that population (Anthony, 2016). Standards for and deviations from the normative treatment of the dead indicate relationships between the deceased and the living, sometimes dependent on an individual’s pathological status (i.e., the special treatment of differently abled bodies or those with pathologies considered dangerous by the community). Deviations may also indicate structural or philosophical change over time (Marden, 2011). Kin-related specifications in unique grave types are provocative stories when framed in the history of human relationships.

The Southwest has many examples of how individual variables are constructed in and reconstruct past social complexity that may be wiser left uncategorized. Chaco Canyon and other Pueblo burials, for example, are wide ranging in their types and characteristics – location, burial counts, contexts, disarray, grave goods, and orientation are all represented by a spectrum of variety. Differential combinations are observed within sites and even the same rooms (Marden, 2011, Martin, 2001). Neither bodies nor graves identified as “elite” or “poor” were homogenous. Even in Pueblo Bonito, where grave goods were used to confirm two hereditary groups and identify “the elite,” the variation of burials in sites and over time was difficult to synthesize with this categorization, which was under-representative of such complexity (Akins, 2001).

Martin eloquently explains limitations in the last century of pattern-seeking through Southwestern bioarchaeology:

> These and other studies have revealed considerable information about how the Ancestral Pueblo people dealt with their dead; on the other hand, even with this intensive focus, we actually know very little. Identifying strong burial patterns and practices among the ancient Pueblo people is still quite elusive… Statistically significant relationships among variables such as location, orientation, grave goods, age, and sex have likewise not been forthcoming. (Martin, 2001, 224)

This variability suggests burial customs were not necessarily shared by regions or even communities. Grave variation does suggest a rich, complex interplay of factors and agency that is important to document. Rather than assigning burials to one of several generalized, ambiguous categories, it is more accurate (and responsible, and interesting) to analytically narrate the relationship of mortuary practice and the disposition of remains to other compelling factors. These may include community structures, such as settlement patterns and familial construction, or survival methods, including subsistence strategies, population adaptation, and resilience (Martin, 2001).

There is also a strong argument to be made about individual stories, especially in the interplay of trauma, health, and mortuary treatment. Higher morbidity burdens may correlate with less or no grave goods and unprepared graves. Non-symmetrical biological profiles, relative health, and burial context still corroborate individual stories of life experience and survival. Skeletal indicators of violent trauma can reveal the life experiences of pain unique to an individual (Martin, 2001, Akins, 2001). These are the specific stories that attract closer scrutiny of wider population dynamics and history. They are also the narratives that will be the most compelling for an audience interested not just

in generalizations but in the legacy of human experience. We must be encouraged, then, as bioarchaeologists, to link individual, active forms of mortuary behavior to broader biocultural processes over time and space.

Perhaps then, it is time to retire such typological trajectories of analysis and reorient to what anthropology has become equally gifted at: particularly, individuality, and the uniqueness of what it means to be human, both now and in the past. Identity, life history, and mortuary-grounded osteobiography can recreate the individual. It is true that "the interplay between individual biographies and broader narratives of life and death in the human past provide the most powerful narratives" (Giles and Williams, 2016). Unique, detailed stories of life and death are the result of painstaking, interdisciplinary research on a comprehensive biography through which we may animate the human remains we know to be living citizens of earlier centuries. This approach to the synthesis is therefore beneficiary to creating a scientific narrative, to the practice of the researcher, and ultimately to the legacy of those people whom we are privileged to research and learn from.

Conclusions

Coupling the modes mortuary archaeology and paleopathology clearly benefits bioarchaeological inquiry and the production of knowledge involving our past. The convergence of these approaches brings together independent, complimentary forms of data for analysis that aims to better understand human history. To truly learn the most from human remains and their burial circumstances, the philosophical and practical approaches of bioarchaeology must be integrated and consider all lines of possible evidence, both

biological and cultural. Bioarchaeology conducted with care to mortuary archaeological and paleopathological evidence promotes a more holistic, biographical approach to studying these materials. These types of projects may be capable of identifying different communities of practice or kinship alongside biological data concerning embodied experience. This is exemplified well by recent projects conducted in the American Southwest. It is important to consider, however, the limitations of studying the human past in hopes of finding strong patterns, correlations, or categories.

As cemeteries and their residents today do not precisely represent our lived hierarchies of power, health, gender, sex, or biological stress, neither do deep historic graves or cemeteries. Bioarchaeologists cannot allow efforts of discovering trends or inferences about cultural practice forget what skeletal assemblages represent – individuals within a community. Even in a population that prioritizes the collective over the singular, the many over the one, research must recognize that every person is treated differently based on their identity, life experience, and relations to those alive and dead. Of the many peoples we are privileged to work with, Pueblo communities and other descendants recognize the value and identity of their dead, as they still have influence, agency, and importance in the world of the living. These relationships, too, must direct our reconstruction of the past and present of the individuals whose burials and bodies we study.

When the agents of a community are no longer alive to tell us their stories, the mortuary context and biological disposition can. Learning about the communal through the singular or the culture through the individual, this work can conduct a posthumous ethnography through the contents of a grave. Many of our greatest stories are told from the

perspective of the one – the hero, antihero, tragic figure, or otherwise compelling character through whom we learn about the surrounding world and its people. A biocultural approach synthesizing mortuary archaeology and paleopathology can produce more insightful, provocative stories about the human past by featuring the experiences, relationships, and circumstances of an individual. From many distinct, harmonized voices, history is told.

CHAPTER FOUR: IDENTIFYING STRESS IN COLONIZED COMMUNITIES AND HOUSEHOLDS

Bioarchaeology is kept socially and intellectually relevant through history- and community-conscious approaches. As seen in the last chapter, a biocultural exploration of the relationships between population, physical environment, and sociopolitical dynamics is more capable of visualizing the myriad influences of stress on life history or relative health. Important historical links may then be explored through the interplay of infectious disease, such as tuberculosis, and the contextual social systems where it spread. Previous work in paleopathology has addressed differences of disease in the pre- and post-colonization American Southwest. Tuberculosis existed in the Americas before European arrival, but an increasing prevalence is interpreted from the paleopathological record after colonial settings were established.

In this region, the violent colonization of Ancestral Puebloan populations contributed to temporal health disparities and raised the frequency of epidemic disease. Spanish brutality and mission systems acted as mechanisms for the oppression and assimilation of Puebloan peoples, contributing to biological stress that increased susceptibly to tuberculosis. New studies are responsible for recognizing the impacts of colonial interaction and adaptive responses rather than misidentifying the vectors that

harmed Native communities as agentless epidemics. Biodistance is a potential research model within bioarchaeological frameworks of stress assessment is the calculation, particularly in relation to pathological conditions. This method can be employed to identify potential biological relationships and stress in communities alongside paleopathology and mortuary archaeology. Biological kinship may be visualized alongside stress indicators, disease susceptibility, and developmental conditions. Differential exposure and household experiences of stress could then, in part, be explored through the impact of certain stressors on potential kin groups. Such projects are valuable for exploring relationships, experiences, and the resilience-constraint dynamics of inequality that persist in modern communities, engendering a higher biocultural burden for marginalized communities.

Bioarchaeology and Critical Studies: "Stress," "Health," and "Contact"

After abandoning a broadly descriptive practice, bioarchaeological explorations of pathological conditions in the deep past have benefited from comprehensive research techniques. The intersection of health, stress, and biocultural approaches in bioarchaeology has a lengthy history that moved the discipline and paleopathology beyond simplistic descriptions of disease (Temple and Goodman, 2014). Stress is conceptualized in these fields through skeletal indicators of physiological disruption to homeostasis and instances of disease, which differentially impact relative health through an individual's life history. In terms of the human system, stress occurs when the biological structure of the host is disrupted. Biological and sociocultural circumstances can buffer or exacerbate stress.

Resistance to disease is multidimensional, dependent on the relative health and resilience of individuals or populations encountering it. Heightened stress can weaken defenses to disease. As stressors themselves, pathogens can also be more virulent if they are novel to an environment and population. Newly introduced pathogens can overwhelm immune systems that have not developed in areas where exposure to this pathogen occurs (Goodman and Martin, 2002, Temple and Goodman, 2014, Reitsema and McIlvaine, 2014, Klaus, 2017, Temple, 2019).

Signs of stress remain in skeletal and dental samples as evidence of growth disruption, chronic or acute disease, and premature death. While paleopathology often cannot identify specific agents, research can focus on severity, duration, and course of stress or disease. Some diseases present unique identifiers that can be differentially diagnosed (Klaus, 2017, Mays, 2018). These branches of evidence allow bioarchaeologists and other similarly-inclined scholars to explore experiences of stress, health, and disease within the past.

These are terms, however, that necessitate critical consideration when they are employed in the analysis of ancient populations. No one stress indicator or disease can define what is deemed to be a "healthy," a "diseased," or a "stressed" individual or population (Temple and Goodman, 2014, Reitsema and McIlvaine, 2014). Stress indicators should not be assessed as anything beyond a proxy to "health," as they represent a stress event during development or adulthood. Specific disease indicators are likewise evidence of disease experience but do not indicate that someone was unhealthy. Differentiating between "healthy" and "unhealthy" individuals or "stressed" and "unstressed" populations

is not possible, as there is not a dichotomous or binary categorization for well-being. Rather, only relative comparisons can be made, and even these studies cannot determine whether a sample of people were "healthy" or not. Paleopathology is increasingly augmented with other diagnostic approaches, especially those developed from pathophysiology of skeletal disease responses that do not rely on a healthy-unhealthy binary (Mays, 2018, 12).

The "Osteological Paradox" provides another obstacle to simplistic diagnoses. This theory negates any straightforward relationship between biological stress indicators and what might be deemed "health" in a population, which is a multilayered and subjective continuum (Wood et al., 2002). Effectively evaluating stress within a community depends on the knowledge of circumstance due to the complexity of interactions between environmental factors. Relative well-being should be assessed demographically to construct a holistic sense of life history and health outcomes in a contextualized population (Larsen, 2001, Temple and Goodman, 2014). Other valuable studies include trends in prevalence, which may be assessed over time or space and correlated to potential factors of the environment. Trends might then be visualized in relation to change, disruption, and adaptation. Trends may also be compared to survivorship rather than simple prevalence. Research on stress and life history in contextualized studies consider human biology, developmental trade-offs, social epidemiology, and embodiment theory in their analysis (Temple and Goodman, 2014, Reitsema and McIlvaine, 2014, Temple, 2019, Klaus, 2020).

Contextualized paleopathology provides data on relative health, stress, and disease in the bioarchaeological record, conducted as population-level analyses to understand

epidemiology through frequencies and patterns of pathological indicators. Studies from North America, for example, suggest that the environment of Native Americans was not devoid of stressors (Larsen, 1994, Goodman and Martin, 2002). Indicators include iron deficiency from dietary restrictions, endemic infectious diseases, periosteal reactions, and osteoarthritis, conditions which were impacted by transitions to agricultural subsistence systems. Pre-colonial studies, then, help elucidate the health and disease circumstances that existed before European arrival.

Assumptions about health in the Indigenous past of North America have contributed to some misconceptions. The biological impact of European interactions has been equated to a "suite of horrific diseases brought from the Old World to the New and the resulting depopulation and demographic collapse across the Western Hemisphere (Larsen, 2001, 70). A singular focus on European-introduced disease, however, reinforces a commonly held misperception that pre-Columbian Indigenous populations lived without illness and biological stress or that European-introduced diseases led to the disappearance of Indigenous peoples Disease was not unknown before European arrival. Strains of tuberculosis, for example, were present before European strains were introduced to the landscape (Larsen, 1994, Buikstra, 1999, Klaus et al., 2010, Bos et al., 2014). It is valuable, then, to assess the relative impact new pathogens had on Native American populations, recognizing that they did not result in the erasure of all Native life. Communities with previous exposure to other pathogens were subjected to new modes of stress during initial European contact and later colonization, and they adapted to disease in modes of change and resilience.

Simultaneously, bioarchaeological research on pathological conditions should not permit disease to overshadow the impacts of relocation, forced labor and slavery, nutritional and resource deprivation, and systematic violence against Native populations. The arrival of Europeans and colonization was unsurpassed in its scale, violence, and forcible rapidity (Murphy and Klaus, 2017, 1). Colonialism has proven difficult to understand scientifically due to a historical record written almost exclusively by colonizers, often inaccurately depicting Native American lives (and deaths). Indigenous experience was also widely variable, socioculturally and biologically, due to the complexity of relations between populations, the environment, and colonial powers. The differential dynamics of trade, conflict, missionization, colonization, and enslavement must be considered in a paleopathological investigation of relative health and disease.

Bioarchaeology and paleopathology have unique abilities to study the impacts of colonialism on the bodies of those who experienced it (Larsen, 1994, Goodman and Martin, 2002, Herring and Sattenspiel, 2007, Murphy and Klaus, 2017). "Syntheses of ethnohistorical documents, archaeological evidence, and osteological analyses are capable of scientifically testing the current understanding" of biocultural impacts after European arrival in the Americas (Murphy and Klaus, 2017, 4). Contextually informed paleopathology is thus one component of anthropological exploration that has allowed for a progressively more accurate picture of colonialism and its impacts among populations of North America. An important topic is that of endemic or introduced diseases, such as tuberculosis, which can be documented and interpreted by the specific analysis of paleopathology. Ultimately, using tuberculosis as a case study, the bioarchaeological

exploration of this disease within Indigenous populations can provide a complimentary perspective on the social, environmental, developmental, and communal knowledge of this period of transition and violence.

Co-Produced Pathogens: Tuberculosis and Colonial Violence

A group of pathogens organized under the *Mycobacterium tuberculosis* complex, tuberculosis is one disease agent sometimes identifiable by indicators on the skeletal remains of its hosts. Infection occurs via inhalation or ingestion of the carrier mycobacteria in the strains *M. tuberculosis, M. bovis, M. africanum, M. canetti, and M. microti*. Different strains of tuberculosis have a zoonotic relationship to humans, including *M. bovis*, and this disease is a major factor of morbidity in the past and present. It is highly communicable and opportunistic in adverse environments, and tuberculosis is a frequent follower of other epidemics, such as smallpox. Rather than being an acute ailment that leaves no evidence of its impact on the body, tuberculosis is a chronic illness that can persist in living individuals to a degree that it remains visible in the paleopathological record (Stodder, 1996, Osterholtz and Martin, 2015, Buikstra, 2019). The study of the paleoepidemiology and bioarchaeological presence of tuberculosis is important for understanding human history, how environmental stressors are implicated in its proliferation, and what present-day factors contribute to its persistence in modern populations (Larsen, 2015, Roberts, 2015).

Mycobacteria are the aerobic bacilli which cause the tuberculosis disease. Tuberculosis itself is a chronic, progressive infection commonly following a period of initial infection and latency once the bacilli are inhaled or ingested. Healthy people infected with tuberculosis have a 5-10% risk of developing the active form of tuberculosis, but this rate varies significantly by demographic and health risk factors. For most who suffer from the active form, tuberculosis reactivates within the first two years after initial infection and latency, but it can also return much later. Any organ where bacilli manifest may become a site of reactivation, but this most often occurs in the lung, possibly due to the favorable tissue conditions, including high oxygen tension (Philips and Ernst, 2012, Almeida et al., 2019, Queval et al., 2017).

Symptoms of active primary tuberculosis infection include productive cough, fever, paleness, weight loss, and general malaise. Cough is the most common symptom, usually minimally productive of sputum, but it can become more productive as the disease progresses. Extrapulmonary tuberculosis (EPTB) manifests in systemic and localized tissues or organs. EPTB can sometimes manifest without evidence of lung involvement, though this is rarer than lung-progressing EPTB. One form of EPTB appears in bones and joints, providing evidence of infectious disease that can be viewed in the paleopathological record of bioarchaeological populations. Clinical data indicates 10-20% of EPTB is located within bone (Davidson and Horowitz, 1970, Almeida et al., 2019). Tuberculosis is, however, a biphasic disease. The secondary phase of infection is when involvement of bone in the form of skeletal lesions is most common.

The frequency of bone-affecting, untreated tuberculosis is 3-5% in medical data, manifesting in cancellous bones and in those infected from childhood. Its lesions appear most often in vertebrae and ribs caused by a lytic response of the vertebral bodies, leading to cavitation, collapse, and vertebral kyphosis. This reaction is usually concentrated in the mid-thoracic and lumbar vertebrae (T8-L5) and central ribs articulated to them. Next in frequency is the hip, also typical in childhood-onset tuberculosis, presenting as tuberculotic arthritis of the articulations. Knee and ankle joints are likewise more commonly affected in children, mostly effecting long bones epiphyses, patella, talus, and calcaneus. Tubular hand and foot bones are most frequently affected in early childhood or infant-onset tuberculosis. Elbow and wrist bones as well as cranial vault and facial bones can sometimes present lesions. The lytic response in all skeletal regions can lead to cavities, abscesses, reactive new bone formation, bony fusion, and periostosis. The relationship to tuberculosis in these markers is largely hematogenic (Roberts, 1998, Roberts and Buikstra, 2007, Klaus, 2010).

Primary destructive lesions in the vertebrae, appendicular skeleton, and occasionally the skull are considered diagnostic of tuberculosis, while new bone formation on ribs is considered suggestive, but not pathognomonic (Roberts and Buikstra, 2007). Different clinical and forensic studies of remains with documented tuberculosis, including those in the Terry Collection, indicate upwards to 62-91% of individuals with pulmonary tuberculosis presented at least one rib lesion, tending towards the vertebral ends of the ribs (Lambert, 2002). Frequency of such lesions is noted less in association to other pulmonary

diseases (i.e., pneumonia or actinomycosis), so these signatures may be valuable for differential diagnosis in the skeletal record.

The course of tuberculosis has great variance in its stages and severity, and this variation depends on both the bacilli's virulence and the host's immune defenses (Houben et al., 2006). Tuberculosis may be rapid in its spread and course within populations who have not had centuries of exposure and thus selective pressure to its presence in the environment. Groups with longer-term exposure to tuberculosis are more likely to have developed immunity to the disease (Philips and Ernst, 2012).

There is a long history of evidence for pre-Columbian tuberculosis in the Americas, despite early debate and skepticism. New genomic work on skeletal remains has revealed the phylogeography of American tuberculosis in South America, which spread through the continent in the first millennium AD before its spread to North America by 1000 AD (Buikstra, 1999, Goodman and Martin, 2002, Roberts and Buikstra, 2007, Bos et al., 2014). Following this recent literature provides a foundation for its application to paleopathological studies in the Americas.

Epidemic outbreaks of tuberculosis in the Americas following European arrival were once attributed to low immunity and new exposure among Indigenous populations, but paleopathological evidence demonstrates that populations in the Americas encountered infectious disease and poor health that sometimes occurred alongside compromised living conditions and other biocultural stressors (Larsen, 2001). Paleopathological data demonstrates that certain strains of tuberculosis existed in the Americas prior to interaction

with Europeans (Gómez i Prat and Souza, 2003, Roberts and Buikstra, 2007, Bos et al., 2014). Reviews of American tuberculosis have found that pre-colonial conditions of sedentarization, crowding, undernutrition, insulated houses, and interpersonal contacts promoted epidemic bursts or low endemic disease that had differential impact on groups the Americas for over two millennia (Gómez i Prat and Souza, 2003). Lifestyle and condition changes influenced shifting epidemiologic behavior and prevalence of tuberculosis over time, even at the same site.

Tuberculosis is especially prevalent in impoverished settings. It is by no coincidence that tuberculosis in the bioarchaeological record, as in the present, is opportunistic in its appearance alongside factors of poor well-being, inadequate nutrition, dense and confined populations, warfare, and other demographic crises. Unsurprisingly, tuberculosis prevalence increased post-European arrival. Instead of Europeans introducing an entirely novel disease complex, however, "if life conditions before and after contact *[sic]* were compared... social disruptions and other biocultural factors certainly elevated the number of susceptibles to mycobaterial infections" (Gómez i Prat and Souza, 2003, 157). The disruption of earlier epidemiological circumstances, introduction of new varieties of mycobacteria, new concomitant viral infections, forced movement and labor, and other impositions of social or physiological stress were hypothesized to increase tuberculosis susceptibility among Native American populations (Gómez i Prat and Souza, 2003).

More recently, ancient DNA and PCR (polymerase chain reaction) methods have established factual conclusions about the presence of tuberculosis in North America before

European arrival (Roberts and Buikstra, 2007, Bos et al., 2014). The first molecular data demonstrating pre-contact American tuberculosis was published in 1994. Following this, debate shifted to the inception and modes of transmission of this pathogen to the American continents, sans Europeans. Mycobacterial genome research by Bos et al. (2014) presented molecular paleopathological insight to the history of tuberculosis. The article details archaeological evidence of precontact *Mycobacterium tuberculosis* in the Americas prior to European contact, supported by a next-generation aDNA methods. Sixty-eight cases of human remains before and after European arrival exhibited skeletal indicators associated with tuberculosis infection. Tuberculosis-complex indicators appeared in the skeletal remains of Indigenous groups who had no known contact with Europeans. Of these, three samples recovered from Peru, dating 1028-1280 AD, contained preserved tuberculosis DNA that was isolated for genomic analysis.

This evaluation identified the Peruvian tuberculosis samples as an uncharacterized member of the larger tuberculosis complex (MTBC), distinct from other identified human-adapted forms of tuberculosis. The strain clustered with those of animal lineages, including one specific to pinnipeds (seals) in the Southern Hemisphere. Chronological modeling corroborated that human infection of tuberculosis had existed pre-contact, most likely from pinnipeds that had carried the disease from a host species in Africa to South America. Zoonotic transfer was calculated to have occurred within the first millennium AD and may have been a result of consuming animal products carrying the pathogen. As the strain is no longer represented in modern populations, it was theorized that this strain was likely out-competed by European strains associated with a higher rate of infection. European

tuberculosis then proliferated in adverse environmental and sociocultural factors (i.e., marginalization and resource restriction) after colonial dynamics were established (Bos et al., 2014).

With these important confirmatory projects comes the necessity of standardizing how tuberculosis is documented and diagnosed. Data collection and diagnostic methods must be consistent throughout these inquiries if paleopathology is to guarantee more accurate population-based research. Ideal, differential diagnostic criteria for bioarchaeological material will isolate tuberculosis as the only feasible cause of paleopathological indicators (Roberts and Buikstra, 2007, Klaus, 2017). Differential diagnosis and prevalence of these lesions is best derived from studies in which cause of death was known for skeletal individuals that could be paleopathologically assessed (Lambert, 2002). Such cases are mostly isolated to medical specimens, which have a different life and death context from those in the bioarchaeological record. Though this precludes certainty that tuberculosis will present the same in more deeply historical remains, medical samples are still valuable resources.

Though the frequency of bone-affecting untreated tuberculosis is 3-5% in medical data, this is still a significant indicator in studies of paleopathology and lived experiences in human history, especially in North America, where the narrative of disease has implications for the identities of myriad communities. The presence of tuberculosis in skeletal remains implies that a larger portion of the population probably experienced the disease. Skeletal indicators present in one or few individuals are admittedly difficult to incorporate into quantitative, population-level analysis. “Population-level data,” however,

“do not always serve themes in contemporary bioarchaeology which seek to relate social identity and social differentiation to the skeletal manifestation of each individual’s life history,” and in some studies they can obscure variation and local trends associated with specific experiences of inequality (Stodder, 2015, 251).

For this reason, multiscalar methods can be employed to study individual life histories in relation to sociopolitical contexts or the underlying dynamics of population health as they communicate disease resilience or vulnerability. Such studies can also have value in studies of migration, settlement, mortality, inequality, and population interaction (Stodder, 2015). The rare cases of tuberculosis found in the bioarchaeological record are therefore valuable, as they indicate important relationships between human biology and the surrounding circumstances alongside relations between people. Rather than only quantifying and comparing prevalence in unspecific, common indicators such as disrupted growth, periosteal lesions, or osteoarthritis, infrequent evidence of disease can explore the social implications of exposure and survival of specific pathogens. Sociopolitical contexts for differential health are especially valuable research perspectives to relate health to the impacts of inequality and continued community longevity.

The concept of “syndemics” is therefore invaluable to inquiries about tuberculosis in Native populations post-European arrival. Syndemics outline the biosocial nature of disease as it cooccurs in specific social, temporal, and geographical contexts, interacting at population and individual levels (Singer, 2017). A mutual enhancement of biological-level disease and social-level harms exists in syndemic models, leading to the exacerbation of epidemiological consequences. Attention should thus be given to interactions among

cocirculating pathogens but their further links to key social, historical, and political factors that exacerbated adverse effects and mortality (Herring and Sattenspiel, 2007). In a syndemic analysis, disease transmission varied among communities in North America, conditioned differently by the duration and nature of the European biosocial interactions. Factors of nutritional and resource stress, forced labor, resettlement, sociopolitical destabilization, and other forms of structural or acute violence were key to tuberculosis transmission in Native communities post-colonization (Larsen, 1994, Herring and Sattenspiel, 2007).

Tuberculosis in the bioarchaeological record coexists alongside other signifiers of stress, such as chronic illness, secondary infections, nutritional distress, and growth stunting markers such as linear enamel hypoplasias. Because it is an infectious disease, tuberculosis is experienced in disparate ways on the community and household level, influenced by the socioeconomic circumstances of different groups (Herring and Sattenspiel, 2007). When possible, then, it is important to contextualize not just temporally and culturally but also archaeologically for a complete vision of the lived experience of the individual or group encountering this pathogen, as associated materials and identities may have a role in explaining disease exposure.

Considering the lives of those suffering from tuberculosis, paleopathology can study the impact of the clinical symptoms these signatures represent. Their contribution to mortality statistics and consequences on daily life of individuals and communities may be inferred (Stodder, 2015). This trajectory can be an avenue for exploring the demographic, sociocultural, and identity-bound consequences interacting with instances of illness.

Research can focus on the particulars of changing biosocial environments as they interplay with disease dispersal. "Equal archaeological and ethnohistoric attention must be shed on further defining how novel behaviors such as population nucleation and resettlement, new gender roles, dietary change, economic intensification, and new animal reservoirs shaped post-contact mycobacterial infection in the New World" (Klaus et al. 2010, 2597). This lived-experience approach to paleopathology explores stories of the past that are more compelling and rewarding than simply identifying the presence of tuberculosis in a population. A region of particular interest for such research is the Ancestral Southwest, which has already borne a depth of scholarship relating to tuberculosis prevalence and change over time. The specific experiences of pre- and post-colonization populations further elucidate the syndemic relationships between colonialism and disease burdens.

Circumstances of the Southwest: Evidence of Tuberculosis Among Pre-Colonization Ancestral Puebloans

As in all areas of the Americas, the Southwest was not a pristine, illness-free environment before European arrival (Ortner and Putschar, 1981 Larsen, 1994). Stodder (2012) summarizes disease in the ancient Southwest and reviews patterns of growth disruption, nutritional problems, indicators of morbidity, and mortality. Climatic, ecological, nutritional, and sociopolitical changes occurred in the later centuries pre-European arrival, and Stodder's interpretation suggests community health was increasingly compromised as communities aggregated and became sedentary with the intensification of

agriculturalism. Health detriments impacted adults and children alike, with a heightened prevalence from 1300-1450 (Ortner and Putschar, 1981, Stodder and Martin, 1992, Roberts and Buikstra, 2007, Stodder, 2012, Osterholtz and Martin, 2015). Within these settlements, aggregated populations had a greater exposure to infectious disease, especially respiratory illness. Population size did not decrease, however, in the presence of multiple endemic and infectious diseases. Rather, cultures and communities persisted through the centuries in spite of pathogens. Summarily, the Ancestral Southwest was a marginal environment in which resilient populations continued to sustain and flourish within Indigenous lifeways.

Tuberculosis-specific case studies have demonstrated this pathogen was an endemic disease throughout Southwestern history, including among the Ancestral Pueblo (Gómez i Prat and Souza, 2003). Recent research has supported these claims through paleopathological evidence and composite knowledge of biocultural circumstances in the pre-colonial Southwest. Known trade routes with South American groups may have transferred the first instances of tuberculosis in the Americas to the Southwest (Bos et al., 2014). Sites with diagnosed tuberculosis include (but are not limited to) Pueblo Bonito, Chavez Pass, Tocito, Chaco, Pecos Pueblo, Kechipawan, Hawikku, San Cristobal, Tonto Basic, Eldon Pueblo, and Cowboy Wash. These pre-colonial localities were occupied from periods between 828 AD through the 1550s, when Spanish conquest entered the region. The earliest are localized to the Rio Grande region and date to a time of population increase and aggregation in large pueblo settlements with agriculture sedentism. “Tuberculosis requires a significant population to remain active, something that would not have been possible during preagricultural times when populations were small and highly mobile”

(Osterholtz and Martin, 2015, 145). Most of these communities, however, were occupied at later periods after these settlement trends were well-established.

The congregation of larger populations, estimated in various literature as somewhere in the range of 80,000-100,000, was sufficient for the existence of tuberculosis and conferrable by sedentary, socioeconomically interactive groups in and outside the Southwest (Stodder and Martin, 1992, Martin, 1994, Stodder, 1996). Collective living situations and nutritional stressors brought about by agricultural diets may have left individuals more susceptible to disease. Conditions of crowded and poorly ventilated living, communal eating, and limited sunlight exposure have been hypothesized to exacerbate spread. Other research in North America indicates tuberculosis was associated with cultural changes or distress. Chaco Canyon inhabitants suffered from subsistence stress as indicated by dental and skeletal infections, growth disruption, high rates of nutritional anemia, and degenerative diseases as increasing stress in later periods reached epidemic levels in severely disrupted communities. Evidence argues that stress was chronic and contributed to morbidity as well as mortality, making the region susceptible to tuberculosis outbreak (Akins, 1986, Stodder and Martin, 1992, Martin, 1994, Harrod, 2012, Osterholtz and Martin, 2015).

More recent burials in San Cristobal, Hawikku, and Pecos Pueblo provide some suggestion of epidemic waves, evidenced by clustered cases of tuberculotic individuals. Because less than 10% of individuals with tuberculosis demonstrate skeletal symptoms, the presence of even a few cases suggests a much higher frequency of individuals likely experienced the disease (Martin, 1994). Some of these sites also include post-Spanish

arrival graves, however, so remains may not exclusively reflect conditions before European interaction (Martin, 1994, Roberts and Buikstra, 2007, Stodder, 2012).

Cultural processes and circumstances varied in this extended period of political and settlement change. Sociocultural environments mediate or exacerbate stress, by extension disease exposure and proliferation. “Sedentism, increases in population size and density, erosion of land and over-use of resources, and domestication of animals [all increased] disease load” in the Southwest before European incursion (Martin, 1994, 95). The region was not a completely reliable environment for agriculture, and precarious nutrition made the health situation suboptimal for all age groups, especially children. Individuals exacerbated by nutritional stress were thus more susceptible to disease due to compromised immune systems or other homeostatic disruptions. Despite these obstacles, concomitant increases in skeletal stress indicators and population size during this time have also been described alongside increased fertility (Stodder and Martin, 1992, Martin, 1994, Roberts and Buikstra, 2007, Stodder, 2012, Osterholtz and Martin, 2015). This dynamic similarly speaks to the resilience of Ancestral Pueblo peoples in marginal circumstances.

Studies conducted on potentially tuberculotic rib lesions have attempted to estimate disease prevalence in relation to different biocultural environments. Samples from the sites of Cowboy Wash (AD 1075–1280), Pueblo Bonito (AD 900-1150), and Eldon Pueblo (AD 1100–1300) exhibited such lesions, with tuberculosis acquisition possibly related to harsh environmental conditions, drought, and escalating sociopolitical stress. Although the latter two sites were more densely populated, rib lesions presented in 28%, 7%, and 10% of the samples, respectively. Differences in prevalence may have an association to the complex

interplay of other biocultural variables particularly affecting the more marginal Cowboy Wash region with adverse climatic conditions. Rib lesions also occurred in tandem with lesions on long bones and vertebrae, and evidence of iron-deficiency anemia, scurvy, and interpersonal trauma were more frequent in Cowboy Wash samples. Opportunistic respiratory infections were hypothesized to have increased during this time, targeting individuals with a higher susceptibility. The disuse of the site was preceded by unusually high levels of stress and disease (Lambert, 2002). It should be conceded, however, that less specific lesions could be diagnostic of another respiratory disease, such as pneumonia.

It is without question that tuberculosis existed in the Southwest before European arrival, exacerbated in some instances by adverse environmental circumstances. The comparative lens is of value when considering the differential prevalence of tuberculosis between communities and over time, as influenced by changing surroundings and responses. It is also, then, valuable to examine how these dynamics shifted after the invasion of Spaniards into the Southwest.

Circumstances of the Southwest: Evidence of Tuberculosis Among Post-Colonization Puebloans

The De Niza entrada of 1539 is generally recognized as the first Spanish interaction with Pueblo peoples. This interaction inspired the Coronado entrada in 1540, and many more organized groups would culminate around 40 years later in colonization and missionization efforts. At the time of first entry by Europeans, their estimates of Puebloan

populations were around 100,000-130,000. This declined to an estimate of 60,000 in 1598, a figure of 40,000 by 1638, and 12,000 in 1750. Initial interactions were rarely friendly and resulted in warfare, forced provisioning, and the destruction of pueblos by Spanish entradas. Spanish settlements established from 1598-1680 were built for colonization and conversion of Puebloans to Christianity (Palkovich, 1994, Stodder, 1996). A brief reprieve was won by the Pueblo peoples from 1680-1692 after a successful revolt against their oppressors, but hostility had re-established Spanish control in the region by 1700. From this time forwards, European contact was persistent and often violent, both physically and structurally (Wilcox, 2009).

The Spanish had several interrelated goals in the Southwest. Upon arrival, they sought to extract wealth from the natural resources and human labor, establish a military presence to demarcate territorial boundaries against other Europeans, and convert Native people into Catholics from whom they could extort additional tribute. Their mechanisms for achieving these aims included violent confrontations and socioeconomic systems that had complex, dynamic, and often seriously negative outcomes for Native populations experiencing Spanish colonization (Klaus, 2017). Post-missionization demographic declines in the Southwest were worsened by disease, war, outward migration, population aggregation, and famine (Stodder, 1996, Roberts and Buikstra, 2007, Klaus, 2017). Disease itself was also exacerbated by the aggregation of disparate groups, enforced stagnancy in non-mobile communities, warfare, and economic disruption.

Permanent settlement of Spaniards began in 1598 along the Rio Grande and continued through 1680, with the population escalating from 250 to 2000-2800. These

settlements contained an ethnic and demographic range of Europeans, Africans, and Mexicans. They also introduced various livestock in the area. Both people and animals provided new vectors of disease into the region. Smallpox, measles, and influenza were a major source of Native mortality during the missionization period. European *Mycobacteria tuberculosis* also arrived in the region (Ramenofksy 1996). Among zoonotic infections, European-introduced *Mycobacteria bovis* would have appeared at this time. Native peoples may have had some inter-strain immunity to these diseases due to the presence of the American strain, but they could also have experienced a higher mortality due to greater virulence as European tuberculosis outcompeted the American form. Introduction and transmission were probably further augmented by traffic between the colonizer missions and Mexico (Ramenofsky, 1996, Larsen, 2001, Bos et al., 2014).

After the founding of Spanish settlements and missions, there was substantially more contact, and throughout the 17th century, epidemic disease was repeatedly imported. New diseases introduced to the Americas included bubonic plague, measles, smallpox, mumps, chickenpox, influenza, cholera, diphtheria, typhus, malaria, leprosy, and yellow fever. Documentation of epidemics in seventeenth and eighteenth centuries involve mostly smallpox, influenza, plague, and measles. Smallpox was the first known widespread epidemic in what is now recognized as New Mexico, documented in 1636. Shortly after, measles arrived, and many pueblos losing to a quarter of their populations thereafter (Goodman and Martin, 2002). Although tuberculosis is not one of the documented epidemics, it is a common and likely partner to these plagues.

It has been suggested that early contact from colonizer exploration trips pre-missionization introduced pathogens, leading to a long-term population loss, as was seen in the severe cases of the Southeast before missions were even established (Larsen, 1994, Larsen, 2001). As in the Southwest, missions in the Southeast were sites of forced labor drafts for Native agriculture and food production, without which Spanish settlements would have collapsed. Mission labor systems continuously exposed Native people to new plague diseases that led to widespread pandemics. They also provoked constant adaptation, change, and rebellion as Native people were challenged by amplified sociobiological stressors. Survival and adaptation hinged on intensified agriculture and feeding the colonial wage-labor system, leading to biological and demographic change for Native peoples. Significant biological consequences of missionization in Spanish Florida included rapid and traumatic reductions in population resulting from disease, labor exhaustion, declining nutrition, frontier raising, reduced population growth, and out-migration (Larsen, 2001). The physiological results of these dynamics is expected to be reflected in skeletal remains, interpreted by bioarchaeology and paleopathology.

Infectious disease has been a heightened stressor and agent of population depletion across the Americas since European colonization began, but the Southwest appears to be relatively less impacted. The period of 1540-1680 does not contain much literature on disease beyond smallpox and measles, and it has been theorized that disease virulence was buffered in comparison to the Southeast by different climate and contact experiences. Paleodemographic and paleoepidemiological data on the setting, vectors, and hosts of disease do however provide evidence that infectious disease did impact Southwestern

populations. Some communities suffered more than others, possibly due to population density and heightened Spanish interaction. Disease incidence in the Southwest increased in sites closest to Spanish settlements. Post-colonization paleopathology studies from Hawikku, San Cristobal, and Pecos indicate higher prevalence of infectious disease among other biological stress indicators (Stodder, 1996, Roberts and Buikstra, 2007). Disease likely contributed to the dissolution of lowland Puebloan villages in this period, which were located nearer to disease centers and geographically promotive climes.

Experiences of stressful social conditions and disease after missionization are at the community level. Pecos, Gran Quivira, San Cristobal, and Hawikku indicate that infectious disease and trauma increased during the period of disruption caused by Spanish interaction, generalized as beginning in 1540 with waves of entradas, conquest, colonization, and missionization through 1680. Paleopathological data suggests that epidemic disease may have been present between 1541-1580, when no entradas were active in the region. These were instead promoted by trade, including east to west routes from Hawikku to Pecos. Disease in these locations then increased after prolonged contact to Spanish settlements and missions (Stodder and Martin, 1992, Larsen, 1994, Stodder 1996).

Population decline as documented by Spaniards has been attributed primarily to disease, but severe drought, demographic instability, migrations, conflict between Puebloan groups, forced tribute resource depletion, and violence between Spanish and Puebloan populations were also significant contributors. As these events disrupted Native economy and subsistence, Pueblo peoples were further predisposed to old and new diseases. Endemic and introduced tuberculosis escalated alongside warfare, dislocation,

undernutrition, excessive labor, economic depression, crowded living conditions, and contact with disease reservoirs. All these factors are characteristic of the Spanish colonial period. Communities interacting with and harmed by the Spanish exhibit increased infectious disease loads, including the appearance of tuberculosis. It appears the pathogenicity and prevalence of tuberculosis increased in the demographic disturbance of Ancestral Southwest populations, potentially due to changes in host resistance (Stodder and Martin, 1992, Larsen, 1994, Stodder, 1996, Bos et al., 2014). An increase of endemic tuberculosis may thus have occurred alongside waves of the newly introduced and more virulent European strains, which became the purveyor of this disease in the Southwest, as in other regions.

Infection rates in skeletal samples reflect increased susceptibility of all disease due to biocultural disruption. Impact varied between pueblos, as was the norm pre-colonization. Differential epidemic mortality can be seen in the contemporaneous cemeteries of San Juan Pueblo, which from 1726-1781 indicates no major outbreaks, whereas the same period in Pecos Pueblo demonstrates devastating losses (Larsen, 1994). The paleopathological record of epidemic episodes, when they do exist, can sometimes be correlated through the assessment of historic knowledge, burial records, and population estimates. This type of analysis also demonstrates how, while population losses were significant, they did not "decimate" or "erase" entire populations of people.

Such European-recorded reports from the deep past may also be inconsistent or ambiguous with actual changes in population due to community migrations or the destruction of records, so such gaps must not be populated with assumptions about

epidemic destruction (Palkovich, 1994, Goodman et al., 2002, Wilcox, 2009). Population fluxes in the Southwest are hard to follow through historic records due to accounts lost after The Pueblo Revolt. Spanish estimates of settlements also do not account for migration when they document decrease over time in the occupation of pueblos. Some Pueblo peoples even relocated to other Native groups located in near territories, insulated from Spanish missionization.

Migration and aggregation differentially exposed and insulated groups to disease and sociopolitical stressors (Stodder and Martin, 1992, Larsen, 1994, Palkovich, 1994). Concentrations aggregated around the Spanish missions, whether by force or not, promoted infectious disease spread due to reduced sanitary conditions and closer proximity of individuals. Epidemic disease, excessive demands from labor in missions, mining, farming, and food tribute, decreased quality of life and resulted in deaths. Tribute-enforced famine and declining living circumstances certainly exacerbated disease, as evidenced in the possible tuberculosis epidemic suggested by a San Cristobal cemetery in which five adults demonstrate tubercular lesions. Middens specific to clusters of tuberculotic individuals may offer more of a contextualized assessment of health circumstances, as the cluster may indicate an epidemic-related burial practice (Stodder and Martin, 1992). The estimation of infected individuals would be much higher than the five buried, attributed to the lesser manifestation of these lesions on skeletons (Larsen, 1994, Palkovich, 1994, Stodder, 1996, Goodman et al., 2002).

Tuberculosis itself most likely did not have epidemic mortality outcomes, but it was a chronic condition alongside other acute diseases and health concerns brought about

by Spanish violence. Chronic infection and repeated exposure weaken the host and compromise the immune systems until even relatively mild health insults can cause death (Palkovich, 1994, Larsen, 1994, Ramenofsky, 1996, Larsen, 2001). In a region of long-term disease exposure, structural violence, and nutritional stress, then, it is no surprise population size decreased alongside the increase of tuberculosis and other biosocial stressors. Decline in this period does not discount Native communities' attempts to adapt and remain resilient to stressors, but rather represents the results of a group biologically overwhelmed by endurant pressures (*sensu* Temple, 2019).

Although rapid depopulation occurred in some places, Southwest populations survived and accommodated these circumstances. Nutritional, disease, and violence-related declines in population were extreme and should not be discounted. Still, a "remarkable resilience of native groups, despite unbelievable pressures-labor exploitation, displacement, disease, crowding, dietary change and malnutrition-during the same time frame" has continued the legacy of Native peoples, including the Pueblo (Larsen, 1994, 144). There were common elements of response to European invasion, but population- and region-specific changes for survival were influenced by local factors. In the Southwest, the demands of maize tribute systems pressured Pueblo peoples to seek alternative means of nutrition, and these shortfalls were managed with the increased use of other plant resources. Revolts also took place to thwart continued Spanish oppression, freeing these communities from some of their stressors. Migration likewise separated Puebloan groups from their oppressors and congregated groups who were able to provide for and protect themselves (Wilcox, 2009). Depopulation of certain settlements continued after the Pueblo Revolt and

reconquest. Tuberculosis persisted in the region after Puebloan communities were sequestered into fewer, isolated settlements, where they have persisted into modern times. Population decline reversed in the late seventeenth century, with population size stabilizing after the conclusion of Spanish rule (Stodder and Martin, 1992, Larsen, 1994, Palkovich, 1994, Stodder, 1996).

A few salient points of context should thus be carried into an analysis of these syndemic circumstances. Pueblo peoples enacted many mitigation strategies to colonial violence, but the environment post-missionization was one even more marginal due to the addition of structural violence. Community disruption and dispossession, enslavement, increased nutritional stress early in life, and constant disease epidemics all but overwhelmed populations. Colonialism and disease festered in every aspect of their lives, from food to occupation, from birth to death. Early life stress and mortality was exacerbated by epidemic diseases appearing in communities every 6-8 years. Pueblo populations transitioned a marginal environment to experiencing the most intensive forms of cultural and physical abuse within the same marginal environment. It is from these experiences of stress and disease that bioarchaeology may assess the impact of these syndemics upon communities at the household, relational level. One option for this type of assessment is biodistance analysis.

Biodistance, Households, and Experiences of Stress and Disease

Biodistance analysis, or the statistical calculation of genetic relatedness between individuals inferred upon observed phenetic expressions of morphology, is a tool used

within bioarchaeological research to visualize potential biological relationships between individuals within a population sample. This method is likewise useful to detect the presence of groups that intermingle versus those who maintain discrete reproductive boundaries (Stojanowski and Schillaci, 2006, Stojanowski and Buikstra, 2004). Migration, "intermarriage," and ethnically distinct groups can sometimes be discerned from the biological-evolutionary distance within a population.

In bioarchaeological explorations of biodistance, the method is used for five approaches that focus on morphological variation within cemeteries: kinship and cemetery structure analysis, postmarital residence analysis, sample aggregate phenotypic variability, temporal microchronology, and age-structured phenotypic variation (Stojanowski and Schillaci, 2006). Specifically:

> "Kinship and cemetery structure analysis seeks to identify the members of family groups within larger cemeteries or determine whether cemeteries were kin-structured… If kin groups can be identified, family-specific social and demographic composition can be outlined, pathology and mortality can be compared within and among family units, and archaeological markers of status can be related to specific family groups within a larger population" (Stojanowski and Schillaci, 2006, 50).

Research concerned with the recognition and potential shared experiences of biologically-related groups can potentially discern these lived relations through cemetery-situated biodistance. Burials interspersed within one site or region can also be compared to deduce similar biological relationships.

Biodistance has not developed without critique, and its application requires serious considerations for how data are collected, analyzed, and interpreted. Similar to previous

“craniometrics” and racially diagnostic pseudosciences in anthropology, biodistance studies often record and compare the metrics of skeletal and dental traits. The separation, however, exists in both the method and intent of biodistance analysis. Many contemporary biodistance analyses consider humankind’s variation in relation to evolutionary and cultural processes rather than attempt to typologically identify or divide races (Stojanowski and Buikstra, 2003, 430). Samples originate from singular communities or related regional groups, not geographically distant populations, assessing differences within rather than between communities, where most variation actually occurs. Intrapopulation and intracemetery research is focused on establishing socially recognized “ethnicities” or cultural groups, identity, biosocial kin relationships, adaptation, and responses to colonization. Biodistance may investigate relationships between Ancestral and descendant groups within a pre-identified population, and it is interested in more than the biological connections between generations (Knudson and Stojanowski, 2009). In concert with other lines of data, biodistance may visualize how social relations changed or were differentially expressed over time, the social organization of a group, and the importance (or not) of biological relatedness when establishing burial patterns.

To further separate itself from the historically racist of typological practices of early anthropologists, biodistance uses dental morphology and non-metric traits for a more evolutionary and genetically consistent basis of documenting biological relatedness of individuals and outlining the social relationships these links create (Stojanowski and Schillaci, 2006, Stojanowski and Buikstra, 2004, Corruccini and Shimada, 2002).

Biodistance can be performed to assess levels of relational identification, from biological families to next-level social groups such as clans that exist within a sample. Different analytical methods are necessary for small cemeteries, spatially structured cemeteries, and uniformly distributed cemeteries. For cemeteries where internal spatial divisions are not explicit or have been disrupted and no longer hold veritable provenience (as can be the case with poorly documented excavations), approaches include "spatial correlation analysis which tests for overall correspondence between phenotypic and spatial distances, nearest neighbor count method that tests for spatial clustering of traits, and non-spatial block search procedure that simultaneously identifies suspected relatives and the traits indicative of their degree of relatedness" (Stojanowski and Schillaci, 2006, 61). Recording multiple nonmetric and metric dental morphological traits as variables can also increase the potential for detecting and producing detailed visualizations of biological relationships.

Biodistance studies of long-term settlements provide insight to how the cemetery was used by groups of people over time and how identity or relatedness directed burial practice (Stojanowski and Schillaci, 2003, Stojanowski and Schillaci, 2006, Corruccini and Shimada, 2002). Different identities or lived conditions may have impacted the spatial relations of burial. Community (locality), family (kin), age, sex, gender, and religious affinity may dictate where, how, or near whom individuals are buried. Biodistance analyses has been revisited to recover evidence of social phenomena such as kinship structures, ethnogenesis, and relationships between social and biological identities (Agarwal and Glencross, 2011). With the introduction of biodistance to these projects, placing

individuals within potential families – depending on the culturally recognized relations existent in that group – allows for more interesting and fine-grain analyses of the experience of many biological and social factors within populations.

Missions are a specific and complex lived circumstance in which biodistance may be valuable for such biocultural analysis, and their cemeteries are a wealth of information correlated to experience (Stojanowski, 2013). The statistical analysis of mission cemetery biodistance provides adaptive and relational perspectives on change over time and within a group. What, for example, are the impacts of aggregation on population variation? Are family or kinship arrangements in cemeteries consistent before and after missionization? A shorter-term analysis of mission cemeteries can provide fine-grained assessment of health and experience among biologically related groups as they experience missionization. In these projects, biodistance thus "refocuses attention on the community and how variation in health and diet manifested among members of the same social network… [which has not] been applied widely and consistently in bioarchaeological studies of historical populations" (Stojanowski, 2013, 12). Familial plots and similarity have more to do with adaptive processes, kinship, and shared experience in these samples than long-term evolutionary processes, emphasizing relational histories within these samples. In this way, the differential stress experiences and relative health of individuals can be relationally compared to those who are more or less biologically related to them, in some cases comparing them to kin or familial households.

There are multiple topics of interest to be investigated through biodistance and the differential health outcomes between biological kin or families in mission environments.

The first is heritability of morbidity, which considers whether shared genetic predispositions to certain diseases or stresses (and the variation of this within a larger population) is responsible for differential immune response or susceptibility. Biodistance and stress studies can also infer shared behavioral or environmental risks associated with a specific kin or family environment, potentially down to the unit of "households."

The discussion or analysis of kin, family, and household necessitates relativism. Kinship, family, and relatedness may be defined in disparate ways from how they are conceptualized within modern or specifically Western frameworks (Johnson, 2019). Relations differed in the past and persist in myriad forms today. Different patterns of family and kin structures may not be as frequent or equally recognized in the Western perspective – the "nuclear family" – often rendered in our biological definitions of family (TallBear, 2018). As an example, marriage in some Puebloan communities in the bioarchaeological and historical pasts exhibit relations referred to anthropologically as "serial monogamy" and "polygamy" which modify the kinship and household burial in terms of biological relatedness (Gutiérrez, 1991).

Biodistance studies therefore must consider how relations are presented in the bioarchaeological record, as these known experiences of human relations are crucial to contextualized understandings of biocultural life visualized through biodistance. Biological relationships may not have been the most essential in a community, especially in cultures where greater kin networks are recognized or in which adoption is common and not discrete from biological relatedness. To accommodate for the variety of kin networks recognized in human history, it is a necessity to understand the relative concepts and

practices of family and kinship in the study population. In this way, the research is responsible for "queering" biodistance approaches and including other practices and modes of relatedness.

This concession creates a limitation for biodistance. If relatedness can be defined both biologically and culturally (through the act of identifying kin), kinship becomes a biocultural guideline for identifying relatives, categories of relatives, and expected behaviors accorded to these relationships (defining the kin relationship). Studied within only genetic-adaptive relationships within intracemetery populations or regional framework, biodistance is not capable of assessing non-genetic relatedness. In these circumstances, it is the additional component of mortuary evidence and historical knowledge that may help disentangle relations.

Approaches to seeking households are still theoretically vast and contribute experiential and relational richness to the bioarchaeological record, and biodistance-based studies should not abandon this direction of analysis. Shared familial environmental influences could result in similar within-family phenotypes and divergent between-family phenotypes that are not directed purely by genetics, and household groups are often still buried near each other regardless of exclusively biological relatedness (Stojanowski and Schillaci, 2006, 59). Biodistance in terms of the spatial relationship of individuals (in life and in death) can therefore explore similarities in environment or residence and exposure to stress, as this has been embodied through pathology or occupational markers. Preserved aspects of identity may arise through the processes of enactment and embodiment, whether

these be the placement or treatment of remains after death. This method still necessitates multiple lines of data and building from the individual to population level.

As variable and dynamic stages of agency, biodistance studies of households can examine both continuity and change in daily practice over time. Households are not simply influenced by the population-level processes of change and development; they are co-produced by micro- and macro-structures, and household actions and interactions have consequences at larger levels (De Lucia and Overholtzer, 2014). Changes may be evident in new ways of organizing households, burying the dead, mediating stress, and worldview, and these shifts can communicate adaptations to changing environments. Unique strategies and decisions are made when faced with challenges, and these choices can also result in different biological consequences or health outcomes. Decisions made by individual households are likely related to immediate concerns and stressors affecting the household, including the experiences of disease or colonization. Households may demonstrate different lived experiences and burial practices before and after the arrival of colonizing groups. Families that resist colonial powers may have disparate health outcomes than do those that assimilate to colonial life. As we still see in events of infectious disease, some households may be left untouched by a certain illness while it spreads near unanimously through another household (Blakely, 1997). These decisions, experiences, and results may thus be reflected in bioarchaeological and mortuary records.

Calculating these relationships requires statistical analysis that considers the social aspects of human life rather than rendering them without agency. In other words:

> One way to systematically and rigorously explore the impact of social factors on the transmission and prevalence of infectious diseases within households and communities is to develop mathematical and computer simulations that build in essential social structures thought to be of importance… [This model] reinforces the important role in determining patterns of epidemic spread played by social interactions at multiple levels, from the individual interactions within a community to regional and higher level interactions that are a consequence of trade, politics, and other social institutions (Herring and Sattenspiel 2007, 196).

The Bayseian approach is format of statistics which – applied to bioarchaeology – considers agency, practice, and chronological context. Theories of agency indicate that people living in the deep past, just as those of the present, were agents with goals and intentions who lived in a social and historical context which they co-produced (Overholtzer, 2015). This person-focused approach to statistical analysis is a combination of archaeological foundations and probabilistic modeling that better estimates dates and chronologies in the bioarchaeological record. Chronological precision allows scholars to anchor their work in social, political, and economic contexts, avoid unsubstantiated individualism, and historicizing agential practice as contingent rather than displaced (Overholtzer, 2015). Rather than simplifying history to a sequence of linear events, a biodistance study can view time as relational, bound to the rhythms of interaction and change that emerge within networks of human activity, environmental seasons, and cosmic-ecological cycles. To accomplish analytical precision and move studies of the household forward, biodistance studies combine a strong theoretical focus of agency and social memory through precise contextual data and Bayesian modeling. Biodistance is one model that may help address questions about the relationship between diseases such as

tuberculosis and the experience of colonialism in various relational groups in the Ancestral Southwest.

Implications of Change: Epidemics "from" or "of" Colonization?

Changes in the instance and severity of tuberculosis, among other biological stressors, have been demonstrated by the review of bioarchaeological paleopathology in the Ancestral Southwest. Endemic tuberculosis pre-European interaction was possibly less virulent, less deadly, or less often acquired due to immunity after its multi-millennial presence on the continent. Post-arrival of Spaniards and European pathogens, American tuberculosis disappeared as the active complex in North America. It is possible this strain was outcompeted by the European version, which was likely more deadly with a lower immune response ability among Native populations. The impact of tuberculosis in the Southwest, alongside other stressors, increased during the missionization period and contributed to population decrease even as communities transformed to adapt.

Tuberculosis and other epidemic diseases were not exclusively suffered by Native Americans. Europeans also suffered from illness, poor nutrition, and environmental constraints while living in the Southwest. Furthermore, the dynamics of agency and interaction cannot be overshadowed by a model of passive disease acquisition and population decline. History in the region commonly focuses on enculturation and colonial valorization while pandemic disease sweeps through Native populations. This paradigm emphasizes the epidemics *from* colonization as the agents of demographic decrease without

considering the epidemics *of* colonization – organized violence and subordination, warfare, resource deprivation, forced labor and tribute systems, and cultural oppression. Without recognizing the multidimensional impacts of colonial interaction, biocultural responses cannot be accurately assessed. If disease is documented as the exclusive causal factor of population decline, such a model discounts the violence of Spanish colonization, Native adaptation and rebellion against these forces, and survival in extremely adverse settings (Larsen, 1994, Wilcox, 2009, Murphy and Klaus, 2017).

More complex analyses of disease and resilience are essential to paleopathological studies of the past. Terminal narratives have misrepresented the decimation, cultural destruction, and disappearance of Native people in various regions of North America. This distortion of history is reversable with more biocultural, historically contextualized, and Indigenous anthropology approaches (Akins, 1986, Wilcox, 2009, Klaus, 2017, Temple, 2019). These lenses consider relocation, migration, and aggregation of groups, as well as the survival of cultures and populations into the present day. "Survival with change aptly describes the contact period for southwestern Puebloan societies, despite novel pathogens, political subjugation, and heightened hostilities… Epidemic outbreaks as a uniform, sweeping scourge are not supported" by oral history, bioarchaeological documentation, or paleopathological insights (Palkovich, 1994, 93).

Biocultural continuity exists among Native groups still living in the Southwest, including the present-day Pueblo peoples. The Indigenous people of the Southwest have not been erased from the landscape, nor have they been assimilated into Anglo or Hispanic populations. Understanding their long histories, especially in relation to health and disease,

is a valuable opportunity for bioarchaeological-paleopathological analysis. Bioarchaeology is at its best when providing evidenced interpretations of the past that illuminate crucial moments in human history and interaction, such as Spanish colonization (Osterholtz and Martin, 2015). Such work can help bridge our historical understanding of stress and its interplay with biological and sociocultural variables over time within the Southwest.

Examples from the Southwest provide an extensive data set through which the trends of pathological conditions can be referenced. These trends can explore relationships between people and resources, the environment, population density, conflict, and other social variables likely to have a role in relative health and well-being, such as colonization and missionization. In these interplays, reaction, adaptation, and resilience have occurred alongside disease and suffering. Many relationships to biocultural agents of conflict are represented in the skeletal remains of Ancestors, the written records of Southwestern history, and Indigenous oral narratives about survivorship (Osterholtz and Martin, 2015).

Diseases, and specifically those we still see in populations today, are perplexing and valuable aspects of the past from which to garner information on human experiences. Tuberculosis is especially important to North American studies, as its long and complicated history on the continent has steered the decisions of some populations. It is ironic that, from the late 1800s through the 1940s, significant numbers of tuberculosis patients migrated from around the United States to seek sanatoria treatment and climatic relief from chronic illness in the traditional homelands of Pueblo peoples. This region is also a central location for evidence of pre-European tuberculosis and a land in which the population suffered horribly from the influences of Spanish-vectored disease and control. Instances of

tuberculosis in Ancestral Southwestern populations have continued through the twentieth century, as appalling endemic levels were documented by anthropologists surveying the region in the past century (Larsen, 1994, Goodman et al., 2002). Tuberculosis is also a reemerging disease during the twenty-first century, thriving in high density and economically poor populations subsisting on impoverished diets, not unlike those who lived in missions during Spanish rule (Roberts and Buikstra, 2007).

However, disease should not represent the only account of how populations decline or come to populate an area, as these notions are reductive to the agency of communities to persist in adverse environments. This is especially important to recognize as disease continues to differentially impact Native Americans in the United States, not because of a genetic or cultural predisposition to susceptibility, but because of the marginal living circumstances and structural violence they have endured for generations (Rhoades, 2002). Another pulmonary disease complex responsible for the present COVID-19 pandemic has killed Native Americans at a higher rate than any other population in the United States, twice that of white Americans and at a rate of one in every 475 people. Disruptions to modern-day Native communities are not credited to a more virulent proliferation of COVID-19 (Yellow Horse et al., 2021, Tai, 2021). As in the epidemics of the past, while disease is an important consideration for interpreting biological disruption, emphasis on disease-related biological burden has overshadowed other essential consequences of contact. Forcible population relocation, imposed labor, physical abuse, dietary change, genocide, and other sociopolitical violences have influenced health and well-being for Indigenous groups in the Americas during the last five centuries. These factors are in

constant syndemic interplay to which populations adapt and encounter biocultural limitations. The bioarchaeological analysis of paleopathology and kinship can illustrate similar experiences in historical communities and make valuable contributions to our understanding of relationships between human lives and their biosocial environments.

Conclusions

After millennia of continuous living in the American Southwest, Puebloan populations offer insight to adaptation through periods of demographic change and crisis (Osterholtz and Martin, 2015). These communities have been in fluxes of growth, decline, adaptation, and migration for centuries. Life in the Ancestral Southwest posed many biosocial challenges to survival, but Puebloan lifeways were further challenged and often dismal following Spanish colonization. Between Coronado's entrada in 1540 to the 1680 Pueblo Revolt, new stressors were introduced to the social and biological experiences of Pueblo peoples. Among other diseases, tuberculosis became further entrenched in these communities after their aggregation and subjugation by Spanish colonizers, who brought with them new forms of this chronic, deadly disease.

Infectious pathogens are not easy to visualize in the paleopathological record, but embodied health outcomes are less biased than historical records (though not unbiased, when left to human interpretation). Tuberculosis has been recorded in higher rates among post-colonization Puebloan populations, a state that followed poor living conditions and violence enacted by Spanish colonizers. Despite the increase of tuberculosis and other

diseases in the region, Native communities persist in the Southwest. Paleopathological evidence makes relevant commentary about such stories of survival that abolish the "vanishing Native" or "depopulation" hypotheses, along with notions that disease alone was the historical determinant of population decline among Native people. Additionally, "long-term cultural longevity cannot be understood on the basis of data reduced to indexes of environmental productivity and counts of skeletal pathologies," although they help to explain the instances of health detriments and community persistence that have existed through time (Goodman et al., 2002, 500). Accurate methods for visualizing relations and households during the experience of colonialism will necessitate the integration of social theory, paleopathological and mortuary data, contextual histories, and statistical biodistance modeling.

The quintessential "epidemic" was not tuberculosis or another disease but rather the complex factors and often abhorrent dynamic brought into the region by Spanish colonization. Much like the mycobacteria that produce tuberculosis, colonial aggressors occupied and proliferated in the host continent and Native territories they entered, often negatively impacting the bodies of Indigenous peoples in a prolonged, chronic, and progressive attack on their communal health.

Since the dissolution of missions in the Southwest, Pueblo peoples have continued to occupy the land their ancestors inhabited for millennia. A resurgence in population has elevated Native American demographics in the Americas, despite persistent obstacles in terms of structural violence and biocultural stressors. Further data on the emergence and persistence of tuberculosis in the Southwest may help inform structural change to fix

contemporary endemic instances of this disease, as it can be seen to accompany situations of poverty, inequality, and oppression experienced by different populations. Research conducted to visualize these outcomes in household units may also help direct studies on how identity and lived experience are embodied in skeletal remains, bridging the bodily to the social and the singular to the relational.

CHAPTER FIVE: THE ONE, THE MANY – BIOARCHAEOLOGICAL INDIVIDUATION, IDENTITY, AND RELATION

Bioarchaeology can uncover identity as it is embodied and reflected by human remains, whether this be in health outcomes or other relationships. The multidimensional aspects of personhood reflect both individual and group identity in ways that transcend essentialist, typological, or racial frameworks. Human remains go beyond the biological – they are interfaces on which lived experience, often directed by aspects of identity, is inscribed, thus representing biocultural and historical evidence. Once-living people interacted with their world as beings and as groups, and these experiences can be explored through theories such as life history, embodiment, biodistance, and mortuary archaeology. Development, form, and stress patterns within skeletal and dental features communicate relative health, occupation, status, sex, and gender among other identities. Biodistance and group analysis can demonstrate the identity-based relationships throughout a population. The multidimensional analysis of identity (both individual and community) within the bioarchaeological record necessitates contextualized approaches, including the situated perspectives of feminist, queer, and Indigenous scholarship. Subsequent knowledge contributes to our understanding of the human past. Identity- and relation-oriented models of research also direct ethics around bioarchaeological work with human remains.

Identity and Identity-Oriented Models

Bioarchaeology explores human existence through interdisciplinary theory and research models as it seeks to understand past populations through human remains alongside their surrounding mortuary material (Knudson and Stojanowski, 2009, Agarwal and Glencross, 2011). As a human science, bioarchaeology does dualistic work: it constructs the biosocial meaning of the human dead while simultaneously reconstructing the biocultural experience of these formerly living people (Buikstra and Beck, 2006, Martin, Harrod, and Perez, 2013, McClelland and Cerezo-Roman, 2016). Bioarchaeology further contributes to contextualized, complex analyses of beings through the concept of identity, including factors of sex, gender, ethnicity, and community roles, using embodiment and life history/life course approaches. Through the data it generates, bioarchaeological research has a responsibility to understand past peoples within the cultural context of their communities, how the dead are known, and their trans-temporal relations to the living (Crandall and Martin, 2014). The tension between bioarchaeological and culturally-recognized pasts can be braided through the study of identity and the position of identity in relationality.

Identity studies have gained prominence in biocultural research on bioarchaeological individuals and populations (Gowland and Knüsel, 2006, Sofaer, 2006, Knudson and Stojanowski, 2009, Gravlee, 2009, Klaus, 2013, McClelland and Cerezo-Roman, 2016, de la Cova, 2019). Identity may be defined as a multilayered construction of the self that directs how roles, relationships, and privileges are distributed among members of a community (Goodenough, 1965, Fried, 1967, Temple, 2011). While the

concept of "identity" is not universal through history or culture, the term acts as a collective structure for a multitude of lived personal aspects that may direct knowledge of the self, community recognition, relations, and biocultural experiences. Biological as well as sociocultural, economic, and political identities exist within one individual; sex, gender, age, occupation, religion, ethnicity, and status are only some of the components of a larger identity. These aspects of self are also frequently layered, intersecting elements within a relational-biocultural environment of other humans, biosocial systems, and the natural world. Identity studies seek to interpret the origins, processes, and consequences of these identities as they can be identified from within the bioarchaeological record.

The practice of studying bioarchaeological persons as people – those with identities, agencies, and experiences – is a more recent development in the practice of anthropology. The study of identity was not perceived as valuable in the field under processual anthropology, but postprocessual and "processual-plus" paradigms elevate identity studies which now represent a complimentary praxis to processual and quantitative approaches (Hodder, 1982, Leatherman and Goodman, 2020). Rather than generating simplistic or biology-centric conclusions, bioarchaeologists who study identity extend their work with biological data to consider contextualizing historical and cultural evidence, such as grave materials and ethnographies (Knudson and Stojanowski, 2009, Gravlee, 2009, Sofaer, 2006). In these bioarchaeological projects, "social identity encompasses gender, age, social and socioeconomic status, ethnic affiliation, and religion, as well as their associated roles and behavioral expectations. In addition to work on health, individual-level disease experiences, and disability, researchers are currently exploring gender

identity and its relationship to biological sex in cross-cultural contexts" (Agarwal and Glencross, 2011, 27). The resulting explorations of individuals and populations are rendered with a person-sensitive biocultural lens. These studies highlight the influence of biological and sociocultural influences on lived experiences as they impact the human body. The identity framework further recognizes skeletal remains as agential persons and engage with the historical formation of human self. Valuable theoretical models – such as embodiment and life history theory – accomplish this from the established techniques of bioarchaeology.

Identity begins with lived experience, as the body, interactions, and life events are integral to establishing various aspects of identity. Phenomenology is the philosophy of such a manifestation, particularly of people's experiences within and outside of themselves (Arnold, 2006). Much as with embodiment, a phenomenological view of the skeletal, bioarchaeological body presents human remains as a complex material artifact and experiential interface between the living person and their world at various moments of life (as well as in death). Instances of and continual experiences are ingrained within remains in this way, retaining a leger of life events. The identity-based approach of phenomenological experience thus relates the embodied components of self with the occurrence of lived moments associated to such identity traits.

Identity studies are best developed with multidimensional lines of data, informing the complexity of multi-layered identity through a series of evidentiary sets. Primarily archaeological (i.e., mortuary) and primarily biological (i.e., skeletal) data, ethnohistory and oral traditions, and environmental studies associated to the region of study are valuable

sources of information on the factors most intimately related to the development, embodiment, and preservation of identity. These components, as outlined through individual research, compose what may be explored through a bioarchaeological approach to studying identity.

The One: Individual Identity in the Bioarchaeological Record

"Populations are comprised of individuals [who] provide a potentially rich source for developing an informed understanding of the lives, lifeways, and lifestyles of ancestors. Simply, an individual skeleton presents information about identity, life history, circumstances of birth (and death), and the particular roles that person played in a society," and studying these individuals through "scientific accounts that place the individuals within the context of their respective populations" can glean valuable information about experience (Stodder and Palkovich, 2012, xiv). The approach of individual identity in bioarchaeology was facilitated by growing precision in human osteology, amplified further by the integration of social theories such as embodiment and biocultural life history (Zvelebil and Weber, 2012, Agarwal, 2016, McClelland and Cerezo-Roman, 2016, Temple, 2019, Zuckerman and Crandall, 2019). Social and physical experiences engender different outcomes that influence physiological development. While identity is not the sole influence for lived experience, it often directs variation between the experiences of individuals within the same community or environment. As such, models of embodiment, life history, and life course provide a foundation for understanding how characteristics of

an individual's potential identity direct biocultural experiences that are imbued within skeletal remains and their depositional environment.

Identity studies in bioarchaeology have the particular strength of treating individual remains as active agents rather than data points, objects, or stationary canvases for evolutionary processes. An example of such a technique is osteobiography, a framework propelled by feminist and queer approaches and its emphasis on individual identity, embodiment, and agency (Stodder and Palkovich, 2012, Knudson and Stojanowski, 2009). Osteobiographies, when produced conscientiously, go beyond inventive character narratives – they produce supported scientific accounts that place individuals within the context of their communities. Population data provides the environment for interpreting individual skeletal morphology and life history alongside mortuary data. In reverse, populations are comprised of individuals, and the compilation of individual osteobiography provides a rich source for developing informed knowledge on the lives, lifeways, and lifestyles of Ancestral populations. An individual skeleton therefore presents a figure within larger-scale studies about identity, life history, and death within a group.

While populations themselves provide an environment for individual growth and experience, the variation generated at an individual level demonstrates the impacts of these environments and how deviation (not to be confused with "deviants") propels change within human systems. "The emphasis on individuals rather than groups or cultures feeds naturally into the modern scientific-evolutionary [bio]archaeology, a school of thought which focuses on mechanisms generating human diversity" (Zvelebil and Weber, 2012). These nuances are revealed through documenting individual behaviors and experiences

while also considering how they may differ in preferences, decisions, and life strategies. "Reconstructing individual life histories as markers of social identity" can, for example, provide insight into "signatures of ancestry, population mobility and partner exchange, and [act] as indicators of individual and collective patterns of health, disease and demography" (Zvelebil and Weber, 2012, 278). Such distinction between individuals is visualized through both biological and archaeological evidence.

To briefly – and insufficiently – characterize aspects of individual study, these projects consider the estimates of biological profiles, identified physical traits of habitual activity, differential outcomes of health and nutrition, and archaeological mortuary evidence (Marden, 1985, Larsen, 1995, Sofaer Derevenski, 2000, Arnold, 2006, Holliman, 2006). Biologically estimated traits compose some aspects of identity, such as biologically-determined sex and age. These bodily conditions of identity may constitute differential roles or lifeways based on the structure of belief systems surrounding reproduction, aging, or interactions. Habitual performance of an action, as an aspect of respective roles conferred by identity, leaves physical results on the skeleton (Temple, 2019). Individuals biologically or socially identifying and identified as women may exemplify different muscle development than those who identify and are identified as male due to separation of labor duties, again conferred by an aspect of identity. Differential health outcomes related to identity may also leave biological evidence (i.e. food sources being divided disproportionately between people of dissimilar economic status or identity-based marginalization causing higher mortality) (de la Cova, 2019). Older individuals, for

example, may have achieved an elevated social position through their age identity, and this may be evident in their burial.

Skeletal analysis may provide evidence for “relationships among biological sex, culturally constructed identities, and the social dimensions of mortuary practices” alongside assessments of pathology, nutrition, and intersecting traits (Holliman, 2006, 442). Improvements to microscopic studies of dental formation, isotopic analysis, and high-resolution paleoenvironmental reconstructions have improved the precision of these methods. Together, these techniques allow bioarchaeologists to reconstruct individual life histories, sometimes from birth to death, assess variation in behavior, and situate this behavior in the context of dynamic relations with the environment and population.

Beyond the skeleton, archaeological representations of identity are potentially visible in mortuary evidence. Social roles, identities, or lived relations in social systems can be symbolized after death in the burial rites (Marden, 1985, Carr, 1995, Zvelibil and Nelson, 2012, Nielsen Stutz et al., 2013). “The final rite of passage, death, may emphasize a person's identity in a way akin to a final statement” (Holliman, 2006, 437). Factors such as burial disposition, location, treatment, and the types or quantity of grave items present may constitute aspects of identity that may or may not also be reflected in biological remains. While the interpretation of this data must be tempered by the consideration of sociocultural variability in symbolism and intentional manipulation, mortuary identity has been used to visualize “include factors such as age and sex [and gender], ethnic identity, marital status, parity, and affiliation of the deceased to other groups such as family, clan, or sodality” (Marden, 1985, 74). Sociocultural interpretations must be grounded, of course,

by the history and beliefs of associated populations and descendants (Stodder and Palkovich, 2012).

Bioarchaeological studies of identity are responsible for interpreting the preservation as well as modification of identity in death through skeletal remains and burial practices. Identity construction in the grave can be reinterpreted and revised by the agents of burial, leading to products of social or personal strategies influenced by beliefs and social dynamics. Burials are never a passive assumption of patterns, and the bioarchaeologist must consider the impact of such agency. In their project on embodied identity, McClelland and Cerezo-Roman (2016) explored identity among mid-1800s Native and Hispanic remains in Arizona. Bioarchaeology, they argued, is inextricably concerned with the reconstruction of past identities. This discipline involves the characterizing individuals or groups as they lived by scientifically transforming the dead, therefore (re)creating identities and stories for a contemporary living audience. "The process of identity reconstruction may be considered a re-embodiment of the person" (McClelland and Cerezo-Roman, 2016, 39). Certain aspects of identity may even be minimized in the mortuary record, despite their presence in life, but this absence of evidence cannot be interpreted as evidence of absence within bioarchaeological assessments (Holliman, 2006, Arnold, 2006).

Identity has integral impacts on both life and death for an individual, and studying the outcomes of identity among past populations contributes to bioarchaeological knowledge, as demonstrated by the role of embodiment in skeletal stress markers and health outcomes. Life history and life course theory further dictate that identity changes

through the lifetime, as related to age or gender developments, marital status and possible kin-group associations. Identity shifts over the lifespan in association with social interactions and, in some cases, biological experiences such as reproduction or injury. As a result, embodied identity will produce changing biological outcomes (Sofaer Derevenski, 2000, Schillaci et al., 2011, Justice and Temple, 2019).

Justice and Temple (2019) documented cultural systems that influenced shifts in identity during maturation among hunter-gatherers from Point Hope, Alaska, interpreted through archaeological mortuary practices. Grave goods, body position, body orientation, and burial depth for Ipiutak (1500–1100 BP) and Tigara (800–400 BP) cultures were compared to age, estimated using tooth formation. The study found no age differences in burial depth, but burial grave-good allocation did indicate age-related treatment. Transitions occurred at age 3-4 and again at 6 which corresponded to changes in body orientation and position in the grave, possibly indicating beliefs surrounding the soul. The "initial presence of animal implements may represent gifting of amulets, while increases in these items at later ages indicate continued maturation… and differences in age ranges of individuals without animal implements between the two sites my reflect stronger delineations of social prestige at Ipiutak… [indicate] complex relational pathways associated with the formation of identity in prehistoric hunter-gatherer communities" (Justice and Temple, 2019, 234). These results corroborated Indigenous accounts of adolescence that follow the emergence of personhood through participation in the socioecological system during adolescence. Changes in burial treatment were associated with increasing social maturity, and these differences may be related to philosophical-

religious beliefs about the soul and vulnerability of young people in death. Burial practices also appeared related to increasing social integration and maturity, which constitute the development of social identity as the person ages. In this community, association to animal spirits increased with age as individuals gain greater access to sociocultural interactions and beliefs through their maturation, progressively integrating them into the social environment and identity of adulthood.

Palkovich (1985) found similar ethnographic support for burial pattern variation among young members of Arroyo Hondo burials. The quantity and types of grave items were significantly different between age groups: 0-6 year-olds were more often associated with mats, blankets, and food offerings, while those aged 6+ were more often associated with "identity-based" items that related to social roles and responsibilities or religious veneration. This difference follows along the historical division between "unripe" identity and societal membership among Puebloan communities, in which infants and young children are not yet fully imbued with human identities. Over the process of growth and introduction to lifeways and belief systems, children were "made into" members of the tribe. The transition between stages of life and identities – from "unintegrated" and "integrated" – may have directed what symbolic or functional items were interred.

The consequences of intersectional identity, such as pairings between gender and class or ethnicity, may also be bioarchaeologically visible due to their experiential nature (Martin, 1998, Brumfiel, 2006, Agarwal and Glencross, 2011). Overlapping aspects of identity mutually inform experience and can compound or negate certain opportunities or constraints experienced by the individual (Casella and Fowler, 2005, Clark and Wilkie,

2006). Intersections between identities may result in heightened experiences of stress and disease. For example, the intersections of class, sex, and gender alongside factors of stress (i.e., disease, trauma, and violence) reveal disparate exposure to physical stressors (Zuckerman and Crandall, 2019). “Gendered and ethnic identities [can be] particularly meaningful and linked, because both are infused with certain physically experienced realities in the form of observable, external signs [and] phenotypic characteristics of relatedness” (Potter and Perry, 2013, 544). These identities are derived from and reformulated in the physical body. Embodied concepts of sex and gender may also manifest in cultural evidence, such as burial features. “When identities overlap... The approaches to studying (them) may also overlap in some aspects, such as combining bioarchaeological evidence and mortuary analysis” (Holliman, 2006, 440).

Identity approaches must also be treated contextually. Social, cultural, and historical narratives must be incorporated in the analysis of developed identities, and studies that consider individual identity, embodiment, and agency have to be situated in the greater context of opportunity and constraint within their biocultural environment (Geller, 2009). Failure to consider contemporaneous and regional conditions, especially sociopolitical systems, results in the erasure of identities outside of commonly binary Western perspectives. Multiple or scalar types of identities, especially gender, may be ignored by these perspectives. Studies guided by third-wave feminism and theorists of color, however, have substantiated the existence of these historically authenticated variations among Indigenous and colonized groups (Holliman, 2011). Such identities are

inseparable from the lived and social experiences of an individual, and misconstrued gender identities can misinterpret biosocial consequences and embodied characteristics.

Individual identity, while providing an outline of a person's probable lived experience, also communicates the culture and history of their associated population. As stated, the reconstruction of identity through burial is enacted by living agents. The potential types of identity embodied in life (and death) is also socioculturally determined, as options for archetypes are usually constrained to those already existent within the living population (Carr, 1995). Such constraints and opportunities on the types and intersections of identity, alongside their impacts on life history, make the study of populations essential to holistic understandings of lived experience in the past.

The Many: Bioarchaeological Populations and Identity Variation

The methods of individual identity study are still paramount to studying the population. Biological profile estimates, health outcomes, nutritional studies, and mortuary analysis are demographically significant lines of study to understand broader impacts of identity within a group. Methods of comparison among and between population members, however, provide additive value to the study of the many. Population studies focus heavily on intragroup variation, identifying different demographics and their disparate or similar biosocial experiences. Membership to these demographics are also associated to identity, as many of these divisions – such as kin groups, profession, or socioeconomic level – are also inseparable from social role and experience.

Biodistance is a bioarchaeological method for discerning groups through comparing metric and nonmetric traits measured from remains, and these divisions may correspond to divisions in identity (Stojanowski, 2006, Knudson and Stojanowski, 2009, 2011). “Biodistance analysis acts as a useful tool for reconstructing patterns of migration in relation to identity within the mortuary record. Patterns of identity are also understood using demographic analysis of burial practices and the distribution of physical indicators of identity (i.e. tooth ablation) between individuals” (Temple, 2011, 324). Intracemetery biodistance analysis can provide a variety of data towards identity studies. This technique can identify the genetic relationships between members of a population and possibly infer systems of social organization, therefore uncovering ancestral-to-descendant lines and associations to certain burial areas. Clustered burials of individuals experiencing similar diseases related to life history may indicate a similar household exposure and/or genetic likelihood to acquire such a condition depending on the biodistance indication of genetic relationships, thus familial identity and correlated health outcomes (Stodder and Palkovich, 2012). Biological relatedness and burial in relation to landscapes, structures, or group burial programs such as ossuaries can indicate an identity tied to these locations. Mortuary practices consistent between biological kin groups further support biodistance data. The “household” perspective can be employed to argue that kin-based rituals, such as ancestral burial and figurine use, were a method for interconnected people to define themselves as a household unit (Hendon, 2002). Mortuary features, in this analytical model, embody the intersection of individuals and the identities of group(s) to which they belonged biologically.

Biodistance is not solely interested in biological relationships. While biodistance is not capable of assessing non-genetic relatedness, the enactment or embodiment of similar identity is often preserved in other means of the mortuary record and may be assessed alongside biodistance to build from individual to group (Johnson, 2019). Identity exists within material cultures, convergence of beliefs, and community, so it is integral to the spatial distribution or construction of cemeteries and graves. Aspects of mortuary evidence may be comparable to group identity when different patterns of ritual or material are consistent between individuals who do not share genetic traits (Hall and Silliman, 2006). Paired biodistance and burial distribution analysis can further suggest the importance of biological relatedness to social bonds, the dynamics of nonbiological relationships, and how these relations correlate to embodied experience. Genetic distance and similar health experiences may indicate social groups rather than households were experiencing similar stressors. Changing intermarriage groups and social relationships can be discerned from calculated biological distances in clustered burials. Culturally-acquired physical attributes, such as tooth ablation, may also be compared to biodistance data to understand how group identities correlate to physical modification (Temple, 2011).

Through this method, the documentation of identity-defined groups contributes to sociocultural understandings of past populations. Populations did not exist as singular, homogenous groups in the past but were often the result of diverse or aggregating communities, leading to communities with varied lifeways and mortuary customs now reflected in embodied experience and burial disposition. When biodistance and identity are paired, these research projects infer the experiences of households, kin, or social groups,

their composition and access to resources, and their shared sociobiological experiences. "Biodistance analysis is not simply about who is related to whom, but how those relationships changed through time and the potential significance of increasing or decreasing biological integration from a social perspective" (Knudson and Stojanowski, 2008, 405).

The variation of identity within groups has implications on life history and health. Social structures within the population might manifest in horizontal differentiation in labor specialization or inter-group dynamics, such as intermarriage practices or social hierarchies (Hendon, 2002, Schillaci, 2003). Akin's (2001) study of two burial clusters within Pueblo Bonito suggested their distinct material culture and mortuary practices aligned with biological variation in cranial measurements and stature. The genetic division between these two groups, separated in burial location, implied disparate social identities and potentially developmental outcomes. Whether this division was exclusive to inherited social status or ethnic difference was debated, but a hierarchical relationship was strongly implied by both biological and material evidence.

Diachronic group analyses confer continuity or transformative processes in biosocial relationships, development of ethnic and community-level identities, and the interplay between biological and cultural identities (Knudson and Stojanowski, 2008, 2011). Group identity formation and transformation are of great import to the bioarchaeological record and understanding of human history (Stojanowski, 2013, Stodder and Palkovich, 2012, Klaus, 2013). As groups within one population establish their relationships to each other, the dynamics of complex societies lead to differential

experiences. Ethnogenesis and group identity development interweave biocultural changes that become established in the bioarchaeological record over time. So, too, can interactions between populations and subsequent identity shifts, especially in periods of power imbalance. While the violence of conflict and competition can lead to the erasure of certain identities, especially in colonial systems, recent bioarchaeological studies have focused on identity hybridization and syncretism rather than destruction (Klaus and Tam, 2009, Klaus, 2013).

Research on this developmental process requires multidisciplinary approaches, often pairing bioarchaeological methods to mortuary practice. "Burial rituals are highly susceptible to ideological, social, and political manipulation and negotiation along the many axes of group identity," and changes in these dynamics can be visible in changing mortuary practices (Klaus and Tam, 2009). Burial rituals express hybridization and ethnogenesis alongside expressions of identity, how these facets of self are embodied, and the process of transforming beliefs (Klaus, 2013). Such shifts are especially visible in colonized populations as they retain symbols of their identity while adopting or adapting new ones. Ritual mortuary activity may be a challenge to interpret from bioarchaeological and mortuary contexts, but the context of ritual agency is indispensable. Ethnographic and ethnohistoric literature, folklore, and oral tradition (when acceptable) may be utilized alongside tools such as archaeothanatology to support the interpretation of ritual symbology, materials, and patterns (Gamble et al., 2001, Martin et. al, 2013).

Klaus (2013) visualized the development of hybrid identity in an Indigenous population experiencing transformation during colonialism. Klaus explored identity within

a colonized population in Peru through the ethnogenesis, hybridity, and biocultural change demonstrated by colonial-era burials at Chapel of San Pedro de Mórrope (1536–1751 A.D.) in the Lambayeque region of Peru. Incorporating multiple lines of archaeological, biological, and ethnohistoric evidence, the study indicated low levels of material culture change in ceramic style or iconographic interplays. More intense hybridity was detected in architectural forms of religious spaces, mortuary practices, social perception, and biological interactions among the local Muchik population. Colonial Muchik ethnogenesis in Mórrope occurred due to the deconstruction of precontact identities as well as widened perceptions of group boundaries. The breakdown of traditional marriage exchange networks, new patterns of intermarriage, a biologically homogenous Early/Middle Colonial period, and ethnogenesis of new identities binding diverse Muchik collectives led to a change in the biocultural experiences of this population. The "mature" hybrid social collective of Middle/Late Colonial Muchik peoples produced hybrid mortuary rituals to resolve cultural tensions while experiencing biological and social change withstanding colonial duress.

Generational continuity or maintenance of group identity are also preserved by consistent burial traditions. In constructing burials and cemeteries, living agents recognize and establish their bond with Ancestral identities. Mortuary features are monuments to the identity of the interred as well as those who participated in the interment, those who claim association with the interred, and those who live in proximity to the burial site (Potter and Perry, 2013). Proper burial is further necessary to reintegrate ancestors with communities, affirm kinship and identity, and reinforce collective memory through episodes of

environmental change (Krmpotich, 2010). The identity of those interred act as a persistent fixture of cultural identity and collective memory, especially when burial practices are consistent over time (Temple, 2011, Temple and Stojanowski, 2019). “The persistence of ethnic identity, in particular, receives special attention in terms of cultural resilience because these affiliations buffer against stress through the maintenance of broad networks of social support” (Temple and Stojanowski, 2019, 9).

Continued identity relationships are visible in the long-term patterns of burial. Prince (2002) documented identity maintenance among the Kimsquit people of the central coast of British Columbia as seen at a cemetery dating approximately A.D. 1850-1927. Photographs and notes on burial style, cemetery monuments, superficial grave goods, and structures noted a transition to between burial type that correlated with increasing pressure of European interaction. At the same time, values and belief systems that constituted identity were maintained. Although European material cultures were adopted, they were infused into underlying social and ideological structures such as principles of rank, extended family, and group identity. Traditional social and economic contexts, which themselves were subject to redefinition but remained distinct from those of Euro-Canadians, thus directed the adoption of any colonial influences.

Members of colonized groups often experience poorer health outcomes due to systematic violence from colonial populations that figure them as “other,” usually “lesser” (Smith, 2021, Temple and Rosa, 2022). Intergroup disparities or inequality also developed under the ideologies imposed by colonialism and embodiment of new, often abusive social roles. Colonial-induced binaries, the Christianization of gender roles, and violence against

women for example, transformed established identities in a way that negatively impacted all Indigenous people, especially Indigenous women (Simpson, 2016, Macintosh et al., 2017). Following colonialism in the North American Southwest, cross-sectional properties in skeletal females show increased processing of agricultural products and experiences of structural violence (Ham., 2018, Wakefield-Murphy, 2017).

Intersecting dimensions can have different consequences based on contextual structures (Brumfiel, 2006, Martin, 1998). Identity variation within a population may or may not enforce differential life history sequences or consequences in one population. Male and female gender identity distinctions in uncolonized Indigenous groups of the Southwest, for example, did not automatically result in the same power imbalances that exist within Western gender binarism. Gender division of labor in these populations did not cause inherent harm but instead relayed identities of a complimentary nature. The intricacies of these dynamics, whether balanced or not, are visible in the oral histories of Indigenous people alongside bioarchaeological evidence. It takes critical, informed bioarchaeology to assess the influences of local and external dynamics on the embodied identity.

The "Other": Informed, Critical Identity Studies and Ethical Practice

Identity studies on past populations are not without repercussions to the living, whether these be personal to a community's sense of self or in their broader relationship to sociopolitical structures and history. Ideally, research yields knowledge beneficial to modern people, such as insights to identity, memory, the impact of social dynamics on health, and continuous, complex relationships between the past through the present

(Martin, 1998, Katzenburg and Grauer, 2018, Gravlee, 2009, Temple and Edes, 2022). These projects must also work, however, to portray identity without perpetuating "Othering," misinterpretation, and erasure caused by colonialism, as these faults were perpetuated in early, uninformed bioarchaeological science.

Bioarchaeology grew within a Western framework of scientific inquiry and method. Early studies emphasized physical difference and "Othering" that promoted hierarchization, objectification, and dehumanization in studies of non-European bodies, cultures, and identities (Muñoz et al., 2015). As a tool of colonial knowledge, bioarchaeology was exclusionary towards women, queer people, and Indigenous communities while certain experiences (namely the white, Western, male, heterosexual) were elevated (Seth, 2009). Research in this era led to the construction of opposing, binary categories (i.e., male-female or white-other). Studies did not consider non-binary or spectrums of variation in identity and experience. Through self-proclaimed objectivity, the discipline tended to reduce humans into objects without considering how the agency or identity of individuals influenced the embodied physical and mortuary evidence studied (Gareau, 2003, de la Cova, 2019). Later, knowledge underwent hybridization as marginalized groups and perspectives fought for representation in the field. Decolonization efforts beginning in the broader anthropological field later reached bioarchaeological practice (Lewis, 1973, Allen and Jobson, 2013, Atalay, 2019). This transformation of the discipline followed alongside a history of growing ranks of feminist, queer, and Indigenous scholars. Their sustained scholarship within bioarchaeology opened novel venues and questions about the same perspectives, experiences, and identities they themselves lived.

Beyond introducing new representation and research ideas to the field, these scholars contributed to models that emphasized contextual and critical study. Contextualized practice necessitated the researcher be informed by known and inferred aspects of a population's biocultural circumstances. This initiative prevented extrapolation from data without contextualizing evidence, such as palaeobotanical data to support understandings of differential resource access as indicated by isotopic analysis. Critical theory intersected with contextual research as feminist, queer, and Indigenous theory argued against prescribing normative archaeological notions or contemporary identities to the assessment of archaeology or remains (Ferris et al., 2014, Arden, 2005, Castella and Fowler, 2008). Conflating current and past concepts of class, gender, ethnicity and other identities leads to inaccurate assessments of past biosocial dynamics related to identity. It is necessary, therefore, to understand the relative concepts and practices of identity divisions within the study population. Informed, decolonized, or "queered" approaches brought my previously marginalized scholars are conscientious of non-Western modes of relation, kinship, or gender and integrate these alternate structures into their identity assessments (Johnson, 2019).

More accurate interpretations of social groups are accessible through these models. Robb et al. (2001) concluded that simple correspondences between biological and social "status" should be traded for a nuanced interpretation that could provide a more detailed history of population social groups. Conclusions also encouraged a less materialistic Western reading of biological and social "status" indicators to avoid the self-fulfilling prophecy of simple correspondences and hierarchical interpretation, as communities

operate in more complex ways (Robb et al., 2001). Instead of conflating ideas of biological "health" with identity and status, diverse studies of health outcomes and social identity explore similarities in environmental exposure and residence, as these circumstances are embodied through pathology or occupational markers (Johnson, 2019).

To direct informed research, bioarchaeologists have also gone beyond relying on exclusively Western-hued ethnographic accounts by consulting the histories of descendant population alongside bioarchaeological evidence and sophisticated analytical models (Brumfiel, 2006). Indigenous knowledges carry specific cultural information relevant for contextualizing physical evidence of past. Migration, the power of women within the community, and the complementarity of roles often structure oral histories. Contextual knowledge and input from Indigenous descendants support the understanding of identities in bioarchaeological populations. Among the Ancestral Zuni, "although women and men specialized in separate areas of economic, social, and spiritual life they enjoyed equal prestige and status... roles were distinct but complementary; both were essential to the welfare of society as a whole" (Roscoe, 1991, 18). Women were not involved in religion not because they were hierarchically excluded, but because ceremony and initiation related to kachina societies were necessary for men to become "complete" in a way that women already embodied through their relationship to childbearing. Women were still involved in ceremonialism and the supernatural. For this reason, it should be unsurprising that many of the diverse and "wealthy" grave assemblages in Hawikku mortuary analysis were associated to skeletally-identified females. Howell (1995, 1996) argues that these women

held prominent leadership roles, positions that were later suppressed by Spanish colonization.

Ethnohistoric knowledge has been used to develop models on the treatment of gender. Ancestral Zuni cosmology conceived of gender as an acquired rather than inborn trait, one obtained through initiations and activity. Zuni communities assigned men and women who preferred certain types of activities to identifiable cosmological archetypes (Roscoe, 1991, Roscoe, 1998). "Zuni men and women were not born; they were made or cooked. Gender was a social, not a natural, attribute. One became a man or woman by learning male or female social forms and, in particular, acquiring symbols of gender during rites of passage" (Roscoe, 1991, 129). Over time, further interchanging of gender roles and identities in life allowed people to never be reduced to a fixed gender, instead having these factors of identity somewhat situationally determined (Spielmann, 1995, Roscoe, 1991, Roscoe, 1998). These relational circumstances of gender must be accounted for in any bioarchaeological assessment of Zuni Ancestors.

Other ethnohistoric knowledge has been applied to visualizing age-group identity (Justice and Temple, 2018, Stodder and Palkovich, 2012). Spiritual knowledge of the Pueblo people, for example, relate the transference of the soul to burial traditions. Infants who do not survive into childhood are historically buried within the home (Palkovich, 1985, Stodder and Palkovich, 2012). This practice is related to the transition of one infant's soul to the body of the next to be born within the household. While this belief does not explain the disposition of all infants in the burial record, it does corroborate the persistence

of this belief through time and within the structure of age-relayed identity among Pueblo communities.

The incorporation of feminist, queer, and Indigenous theories has been essential for movement past simplistic, reductive, assumptive, or binary understandings of gender and sex in the bioarchaeological record. “While perhaps it may not be a big leap in some instances, [going from sex identification to social identity] is a huge leap at other times, and is precisely the reason that one should never rely on biological data alone—sex and gender are *not* the same” (Buikstra and Beck, 2006, 377). Feminist and queer theory in bioarchaeology assess gendered variability in the historical record, including nonuniform and intersecting consequences, dynamics and identity categories (Nelson, 2008). These approaches emphasize a distinction but interaction between sex and gender as well as the non-binary, biosocial experiences of sex and gender. Life history and embodiment studies continue to uncover the complexities of these identities in the past (Sofaer, 2006, Holliman, 2011, MacIntosh et al., 2017).

Queer or Indigenous exploration of third gender in case studies for North America have received special attention (Holliman, 1997, Holliman, 2006, Holliman, 2011, Sofaer, 2006). Theseprojects are primary spaces for destabilizing concepts of "normalcy” in biosocial identities or the bioarchaeological record, particularly in relation to material culture (Geller, 2009, Arnold, 2006, Voss, 2006, Holliman, 2006). In the Ancestral Southwest, near a dozen distinct Pueblo communities have identified individuals whose gender and sex were both distinguished and non-binary (Roscoe, 1991). Burials involving biologically-identified male skeletons at Hawikku have suggested identities of *lhamana*

individuals (Bruhns, 2006, Arden, 2008). The inclusion of items associated with women's occupations such as basket-making have been identified with male-assigned skeletal remains. A female-assigned skeleton has also been documented as wearing both a dress and a man's dance kilt, whereas the burial of a historically recognized *lhamana*, We'wha, involved both male and female attire. Indigenous perspectives on gender identities within Pueblo communities have produced more informed interpretations of these burial contexts and the life histories they entail. Particular work on gender identity and life history research in mortuary analysis is still relatively untapped. Perry (2004) explored stress markers in skeletal remains as these related to potentially third gender individuals responsible for undertaking and burial, but relatively few studies have deliberately considered nonbinary genders from the outset of the research program.

While rejecting Western-derived dualism or binary studies of sex and gender, bioarchaeological studies conducted with Indigenous populations must also be cautious of prescribing identities that would not have existed in the past. In particular, sexuality and gender were not conceived of or constituted as explicit an "identity" as they maybe in the present day, and some categories currently recognized by queer communities are exclusive to the present (Casella and Fowler, 2005). While concepts of Two-Spirit people are now augmenting the exploration of non-binary individuals in the past, this identity does not fit into Western queer anthropology, and it likewise did not exist in the Indigenous past. In Ancestral communities, being non-binary was not "socially deviant" in the way that queer behavior (and theory) has existed in Western society. In studies of archaeological evidence of non-binary or third/fourth gender identities, it's vital that "archaeologists be very clear

that variance from a statistical norm does not necessarily indicate that Two-Spirit people were in some way transgressive, oppositional, or in a relational stance to cultural norms" (Casella and Fowler, 2005, 67).

Bioarchaeological studies of identity have important implications for the more general understanding of human lived experience and the preservation of memory. Seeking identity within the bioarchaeological record preserves the humanity of those explored within this human science and promotes ethical treatments of deep to recently historical human remains (de la Cova, 2019). Identity-focused approaches, especially feminist and queer anthropology, "peoples the past and diversifies the present. It also requires practitioners to reflect on self and scientific production" as fallible and, if practiced poorly, objectifying towards past human beings (Geller, 2009, 75). Critical informed approaches to identity prioritize agency in the bioarchaeological record and promote a vision of active, complex societies in human history. By promoting the image of living people within the bioarchaeological record, identity studies redistribute power away from the Western scientist back to the populations anthropologists are privileged to work with. Identity research supports the ethical treatment of those perceived by outsiders as dead, recognizing and respecting the memories of living descendants as they understand the persistence of their ancestors in this world and beyond. In studying the bioarchaeological body, identity research can never separate living beings from the bones that once carried them.

Informed and critical identity research also uncovers identities that have been obscured or oppressed and demonstrates the impacts of historical events in the past. Bioarchaeology can uncover "conditions under which [sex or gender roles] and sexual

division of labor may have been rigid or flexible, based on skeletal evidence [and] contributes to understanding the role of gender in structures of power" as they changed over time (Buikstra and Beck, 2006, 90). Colonial violence targeted female and non-binary gender identities, roles, behaviors, and lives (Varien and Potter, 2008, Smith, 2021, Temple and Rosa, 2022). Colonial masculinity "involved the violent reconfiguration of sex, gender, sexuality, kin relations, and reproduction among Indigenous and African-descended peoples and others—intimate violences that were core to the consolidation of colonial masculinity and fundamental to the installation and ongoing existence of colonial states" (Smith, 2021, S158). Continuous erasure of non-heterosexual relationships, matriarchies, nonmonogamy, third, fourth, and other nonbinary genders promotes the agenda of a colonial possession of Indigenous history. Feminist, queer, and Indigenous studies of identity argue for a past populated by individuals with gender flexibility prior to colonialism, countering the naturalization of gender norms imposed by colonialism. Furthermore, Christian ideology was not uniformly adopted alongside shifts in material culture or burial traditions (Prince, 2002). Reassertions of Native identity occurred while Indigenous people adapted to resource accessibility. Instead of reifying the belief that the colonial system is the natural, inevitable, or evolutionary progression of the human species, decolonial approaches to identity seek to reverse the erasure of colonial practices by corroborating their existence in the deep and recent past (Smith, 2021).

"Using individuals and their populations as the units of analysis, bioarchaeologists are able to provide 'bottom-up' insights into the lived experiences and identities of the privileged and the disenfranchised alike" (Zuckerman and Martin, 2016, 430). The broader

biosocial effects of colonial European exploitation and policies have been examined in dual studies of paleopathology and identity (Gravlee, 2009, Temple and Edes). Increased degenerative joint disease, dietary shift towards poor nutrient diets, differential experiences of violence, and decreased health have all been attributed to the recognition of colonized populations as "Other" or less than human in relation to colonizer identities. It is a necessity for bioarchaeologists to communicate these pasts with consideration to the continued impacts of identity on lived experience as "all too often the research questions we pose, the reconstructions we create, are of little interest to anyone other than specialists" (Geller, 2009, 75). Differential life histories and health outcomes still hinge on the biosocial structures reinforcing identities of "white" and "Indigenous," "man" and "woman," "straight" and "queer." Whatever construction or dynamic these forms of disparate identity take, their existence is inseparable from the lived experience of individuals or groups persisting into the contemporary moment.

Conclusions

Identity, as expressed through studies of embodiment, life history, and mortuary-grounded osteobiography, can recreate the individual. Biodistance and comparative health or nutritional models relate the experiences of individuals to elucidate group dynamics and histories. Identity studies reveal unique, detailed stories of life through which bioarchaeology animates the human remains that carry our 'selves' within human history. "The interplay between individual biographies and broader narratives of life and death in the human past provide the most powerful narratives," including those concerning the

development and embodied experience of identity (Giles and Williams, 2016). Ultimately, the most effective methods of analysis, contextual and critical approaches, and Indigenous, queer, and feminist perspectives can be united to recognize experience and promote ethical, informed bioarchaeological practice. An effective performance of bioarchaeology can be conducted through the humanizing framework of embodied identity.

CHAPTER SIX: A CULMINATION – THE INDIGENOUS LIFE HISTORY APPROACH

Existing alongside a fraught, colonial past, contemporary bioarchaeology must model its practices and research through a conscientious lens of informed and critical practice. Paradigms incorporated into bioarchaeological methods and theories must therefore be evaluated for the principles they perpetuate. The most informed and informative bioarchaeological research is directed by a biocultural approach, the necessary foundation to study a biocultural human group. Bioarchaeology also benefits from the integration of life history theory, as it assesses the co-produced biological and cultural components of life to explore the progress of experience as it is embodied in human remains. A biocultural life history method of bioarchaeology can be further supported through the perspective and theories of Indigenous anthropology.

Scholarship has expanded in the last two decades to consider expansive life history and Indigenous perspectives in the discipline of bioarchaeology, broadening its prospects as a discipline. Both life history and Indigenous anthropology perspectives assess the human condition and experience through holistic perspectives that synthesize knowledge about the individual, collective population, and contextual environment. Both consider aspects of sociocultural and biological influences. Both are valuable for reconstructing a more realistic human history within an ethically-conscious research. Aligning life history

and Indigenous anthropology both feasible and beneficial to bioarchaeology conducted in North America, especially work involving Indigenous remains. Their interplay reaffirms histories of resilience, constraint, and continuity while also advocating for collaboration, repatriation, and the sovereignty of Native people. This braided approach is even more useful when research involves collaboration with or direction from Native scholars, who provide valuable insight to knowledge and ethical practice. A relevant model is exemplified in studies of the Ancestral Pueblo Southwest; research with this population has a renewed focus on biocultural and Indigenous methods to address reflexive research questions. An Indigenous-life-history approach can and should be a component of informed, informative bioarchaeology in this region and beyond.

Conscientious Practice in Bioarchaeology

Practitioners of bioarchaeology, as handlers of human remains, operate in circumstances requiring extremely particular and conscientious ethical treatment. Bioarchaeologists should be unanimously aware that the practice, while now guided by these standards, has a history involving the unjust removal of human remains from their burial locations without the permission of descendant communities (Dewitte, 2015). Bioarchaeological excavations before the mid-twentieth century involved the looting of Native American graves to accumulate large “collections” for anthropology departments in museums and universities. Unconsented excavations have disproportionately affected Native populations, resulting in the removal of thousands of ancestors from Native cemeteries without permission from their descendants. This imbalance has persisted

through the twenty-first century, in which Native remains represent a majority of museum skeletal collections while the agents accessing them are a majority non-Native (Atalay, 2006, DeWitte, 2015). More recent decades have brought a change of practice which enhanced the ethical treatment of remains, consultation of descendant communities, and mass repatriation efforts supported by most of the discipline to return wrongfully procured remains.

Legislation such as NAGPRA (Native American Graves Protection and Repatriation Act) was initiated by the directive of Native activists and anthropologists who sought to remedy the mistreatment of Native American remains within institutions, including universities, laboratories, and museums. Such laws were directed by and further direct ethical practice by researchers within all academic institutes. Legislation is informed by the recognition of Native American remains as the Ancestors of modern Native people, power differentials between Euro-American researchers and Native populations, and the colonial history within the discipline. These laws, which mandate the repatriation of certain Native remains, have been simultaneously applauded for their involvement in regulating bioarchaeological ethics and criticized for their perpetuation of colonial, racist, or otherwise exclusionary policies, namely regarding cultural affiliation of remains and federal recognition of tribal groups (Hardie, 2019).

Advocates for Native control of Ancestral bodies have placed specific pressure on bioarchaeological collections still containing Native American remains. In bioarchaeology, where those being studied are dead, it is argued that bioarchaeologists must be guided by the wishes of descendants and affiliated communities (Dewitte, 2015, 13). This imperative

is especially necessary when there exists a power differential between the groups studied and those conducting the study, as persists for Native Americans in relation to non-Native researchers who represent Euro-American institutions.

In these circumstances, conscientious bioarchaeology also recognizes the multiplicity of translations that exist within the skeletal remains they handle. A bioarchaeologist's assessment of human remains depends on their standpoint, education and experience, research context, and what factors of the remains are studied. Skeletons do not speak on their own in bioarchaeology, so anthropologists depend on the interpretations of living agents (Verdery, 2004). The differential translations of remains are particularly distinct between classic bioarchaeological theory and Indigenous beliefs about the body or identity. This tension has been recognized and debated for decades, leading to strained relationships between anthropologists and Indigenous representatives.

A unifying factor between modern bioarchaeology and Native perspectives, however, is the fact of "humanness" making remains identifiable to others: "they were once human beings with lives to be valued. They are heavy symbols because people cared about them when they were alive, and identify with them" (Verdery, 2004, 307). Contemporary bioarchaeology acknowledges that human remains are more than utilitarian objects of value for scientific research. Body politics inevitably still arise in connection to kinship and proper burial practices, as these are integral organizers of human society, identity, and belief. For some communities, ancestral remains are entities of symbolic veneration and cultural significance (Verdery, 2004). Native American experience with these sociocultural aspects of life – often disturbed by colonization and, later, anthropological study – thus

have tremendous influence in the debate of how bioarchaeologists may ethically hold and handle Native remains.

Bioarchaeological work has political effects through its generated data and the trans-temporal ways the dead are related to the living (Denzun et al., 2008, Crandall and Martin, 2014). Bioarchaeology reveals meaning in the remains of the dead while (re)constructing the meaning of the formerly living, which further implicates ethical priorities. Alternatively read, bioarchaeology of persons and identities visualizes embodiment and reembodies the past through skeletal remains (Verdery, 1999, Watkins, 2018). Conclusions made about the dead are not without repercussions to the living, whether these be personal to a community or in their broader relationship to social and power structures. Those concerned with enacting informed and informative bioarchaeology support certain justifications for studying historic skeletal remains. Ideally, research yields knowledge beneficial to descendant groups, such as insights to health, identity, and memory that have continuous, complex relationships between the past through the present (Martin, 1998, Denzun et al., 2008, Katzenburg and Grauer, 2018).

Rather than generating simplistic and potentially harmful typological studies, many bioarchaeologists now integrate contextual historical and social evidence, such as material culture and various forms of historical knowledge, to their biological assessments. The resulting explorations of populations or demographics are considered in their regional contexts and not isolated from the present day. These studies highlight the interplay of multi-dimensional lived experience in the past. They further recognize skeletal remains as potential sites of memory-making, identity, and an opportunity for descendant

communities to engage with their Ancestors. A valuable theoretical construction, life history theory, accomplishes this kind of work within a contextualized biocultural paradigm, and its application to bioarchaeology strengthens the research conducted under these foundational ethical concerns.

An Anthropologist's Perspective: Life History

At best, bioarchaeology without biocultural context essentializes the biological component of human experience and, at its worst, perpetuates Western-biased, even racially-insensitive science. To avoid this type of research, a "bioarchaeology of social complexity and inequality… is dependent on ample archaeological data and in-depth understandings of the regional historical and social contexts" (Klaus, 2017, 459). Such work has been conducted by progressive, activist biological anthropologists such as William Montague Cobb since the early twentieth century, decades before its canonical acceptance in the discipline. Cobb's early biocultural anthropology blended extensive data collection with an understanding that research on human beings has undeniable political implications. Furthermore, he introduced concepts of the biocultural synthesis through his studies of health outcomes for disadvantaged and marginalized populations (Rankin-Hill and Blakey, 1994, Watkins, 2007). Such concepts are continued in current biocultural models, such as life history.

The life history framework, in broader science, attempts to understand the diversity, causes, and results of life strategies through factors intrinsic to the individual and those in the environment as they are experienced through the life cycle. In bioarchaeology, life

history theory engages with the complexity of human remains as both social and biological, considering the multidimensional physical and cultural environment a person existed within throughout their lifetime. The approach is therefore inclusive to all influences on lived experience. Exploring the process of life history for the individual or group also denotes an interest in how they adapt in response to changing environmental circumstances. Life history bioarchaeology investigates the dynamics of adaptive plasticity versus constraints and later outcomes of mortality as directed by earlier stages of human life. While its base assessments focus on individual, life history places individuals in relation to a broader set of population data to visualize community-level relationships (Temple, 2019). Life history has a strong relationship to embodiment theory, the concept that plasticity also results from the active development and engagement of humans with their environment, whether this be conscious or unconscious. It is also adept at relating physical experiences to personhood and identity, grounding the importance of a social life in biological development.

This theory also considers the results of accumulating stress on the body, resulting in death. Despite having exceptional agency (which must be accounted for in biocultural analyses) humans are not indefinitely adaptive beings, and death must also be considered alongside survival. It is therefore mandatory for bioarchaeologists to acknowledge the limits of a biological organism when they encounter insurmountable physiological constraints and understand how cumulative experiences facilitate death (Temple, 2019). Proper bioarchaeology contextualizes human remains on which stress indicators have manifested, so it is able to demonstrate how both ecological and cultural contexts interact

with the body to buffer or propagate stress ultimately accumulating in death. “Thus, instead of ignoring the primacy of social agency, a contextualized bioarchaeological approach to life history theory relies heavily on social and ecological agencies as mechanisms for explaining diversity in [life] strategies” (Temple, 2019, 42). For this reason, bioarchaeologists applying life history to skeletal remains analyze the interplay of ecological and cultural surroundings in concert with biological capacities, an important perspective when emphasizing historical inequality or marginalization.

A related approach, that of life course, is an “interrogation of human life as a result of interrelated and cumulative events over not only the timeframe of individuals, but also over generations at the community level” (Agarwal, 2016, 130). Life course explores the trajectory through which experience unfolds, considering the historic and socioeconomic contingencies that impact the growth and development of human bodies. The individual as a unit of study is viewed as the sum of previous life experiences – social and biological – and their plastic response to exposures – successful or not – alongside the consideration of intergenerational phenotypic expression (Agarwal, 2016). Similarly to life history, life course thinking embraces embodiment and identity. Life course theory hinges on plasticity and adaptive biology, but it permits less exploration on the influence or outcomes of constraints.

Both life history and life course are capable of understanding health disparities in the past due to social and biological circumstances. Life history can explore limitation as well as adaptation and may therefore constitute a stronger bioarchaeological approach. This ability is derived from individual skeletal data conglomerated to visualize broad-scale

populations or processes, often considering experiences of health and disease in the context of larger sociocultural environments (Knudson, 2008). Recent bioarchaeological studies of life history emphasize a deeper understanding of past lifeways be examining archaeological, historical, and ethnographic sources alongside skeletal analyses (Stojanowski and Scillaci, 2006, Stojanowski, 2013, Crandall and Martin, 2014).

Skeletal analysis takes on new life through these studies. In some cases, life history research focuses on the biocultural identity, a mode of inquiry constituted by the individual body (biological age, pathology, kinship indicators), social bodies (evidence of inequality established in resource or growth disparities), or political bodies (those exemplifying characteristics related to activity or inequality). In other projects, life history has led to the reintegration of individual life experience into the greater contextualization of a living, dynamic interplay of historically known events. Insight as to the meaning of these "bodies," however, has been obscured by biased perspectives that resonate in a colonially-derived paradigm, one that has characterized institutional, scientific, and anthropological thought (Katzenburg and Grauer 2018, Atalay, 2019). It is in this conflict in pursuit of informed narrative that some of the most crucial contextualization can be provided by marginalized perspectives. Specifically, for the work of bioarchaeology in North America, Indigenous anthropology may offer the most salient and conscientious lens.

An AlterNative Perspective: Indigenous Anthropology

Understandings of the past are formed through particular methods of knowledge production (Haraway, 1988). The best method to effectively reduce cultural biases and

distortions of bioarchaeological knowledge is to diversify evidence and the sources, methods, and viewpoints from which they are derived. Blending varied perspectives provides routes of verification and allows for different types of interpretative error or bias to be cross-examined. “The greater the diversity of the evidence we have about the past, the easier it is to rule out alternative interpretations that are unlikely to reflect actual events” (Katzenburg and Grauer 2018, 13). A risk of most Euro-American science, however, has been the long-term limitation of Western perspectives within scientific exploration.

Anthropology has been a purveyor of this pattern. Euro-American anthropologists have oft been the sole contributors of bioarchaeological knowledge about all of humanity, but the field has been particularly dogmatic in crafting Western histories about and without Indigenous peoples (Smith, 2021). The vast majority of bioarchaeological work in North America has recorded and interpreted Native American, First Nations, Native Hawaiian, and other Indigenous remains. Power to define Indigenous pasts has traditionally been appropriated by institution-based Western science, a progeny and tool of colonization (Steeves, 2015, Subramaniam, 2017). Academic anthropology is still steeped in a colonial manner of American knowledge production, as the educational system has ever been embedded in a colonial system. Often, American and European anthropology students are not even required to take any Indigenous history, Indigenous theory, or preservation courses to graduate (Steeves, 2015). As such, the Indigenous past has been framed by the ideologies of academics who have no experience with Indigenous ways of knowing or being. Publications have conventionally interpreted the Indigenous past through the framework of a traditionally white Western (and even racist) world view. Such dis-linkages

characterize much of the work that has and is still done in bioarchaeology. Notable exceptions have occurred in some regions, such as collaborative projects in the Southwest, but the power of interpretation is still typically seated with the non-Native anthropologist and Western frameworks (Martin, 1998, Steeves, 2015, Colwell, 2020).

Indigenous scholarship within anthropology has provided crucial power to broadening the scope of perspectives and research topics. Indigenous groups who have experienced inequality in settler-colonial systems and in the scientific community diversify the questions, insights, theories, research designs, and interpretations of the discipline. More importantly, the scholarship of Indigenous scientists and representatives has increased not just visibility and representation within anthropology but has begun to transform subfields, such as bioarchaeology, into more salient tools for combating settler-colonial custody of human history (Smith et al., 2019). Indigenous perspectives also expand the impact of bioarchaeological work through promoting decolonial practice.

In the school of anthropology, Indigenous, Native, and First Nations scholars bring with them a diversity of experiential knowledge, critique, and Indigenous theory to what anthropologists colloquially recognize as Indigenous anthropology (Mihesuah, 2000, Atalay, 2006, Supernant et al., 2020). Indigenous anthropology informs non-Indigenous scholars and the public of Indigenous realities within settler-colonial systems of violence. This framework facilitates competency in institutional knowledge production settings of anthropology. It also inspires myriad reconstructions of method and scholarship in the path to conducting decolonial research (Mihesuah and Wilson, 2004, Kovach, 2010, Mertens et al., 2013).

Within the concern of knowledge production, the decolonial concerns of bioarchaeology are amply addressed by the directives of sustained Indigenous scholars and theory brought to the discipline through Indigenous anthropology. Books on practice and current standards (Nicholas, 2010, King, 2013, Simpson and Smith, 2014), the history of repatriation (Bray and Killion, 1994, McKeown, 2012), and community meaning in the act of repatriation (Gulliford, 2000, Turnbull, 2010, Colwell, 2017) are deeply informative sources demonstrating the impact that Indigenous theory has made in bioarchaeology. The disruption of settler-colonial research models is not fully realized in exclusively biocultural or life history models. Ultimately, the practice of Indigenous anthropology seeks to promote decolonizing practices while also assessing the past in more careful ways. Exploring how this perspective functions in bioarchaeology can also delineate its ability to support informed, decolonized life history work with Ancestral remains.

Interwoven Indigenous Anthropology as a Decolonizing Practice

Anthropology and bioarchaeology have developed in colonial ideologies and colonial spaces, and much research still operates within Western knowledge systems. These disciplines have shifted their methods, however, towards decolonized practices to study a human history that has been both influenced and interpreted by colonialism. Decolonizing practices such as Indigenous anthropology critique and deconstruct Western theory to produce research that recovers and investigates Indigenous experiences and knowledge (Atalay, 2006, 192). Practitioners of Indigenous anthropology advocate for resistance to continued colonization, revaluing Indigenous perspectives, equitable

collaboration between Indigenous and non-Indigenous participants, and reclaiming political and community histories (Mihesuah, 2000, Ritenburg et al., 2014, Colwell, 2020). Decolonized Indigenous frameworks are thus informed by Indigenous worldviews, oral histories, and experiential dialogues.

The practice of Indigenous anthropology is conducted "with, for, and by" Indigenous people, employing decolonizing and postcolonial models of knowledge production in sync with the goals and curiosities of these communities and in harmony with their traditional knowledge and lifeways (Mihesuah and Wilson, 2004, Atalay 2006, 2019, 2020, TallBear, 2014). Similar to life history, Indigenous understands individual agents who represent the population in a holistic view of human relationships with their biocultural environments anthropology. Both approaches advocate for the recovery of lifeway histories that can benefit current health and well-being. Within Indigenous anthropology, such knowledge recovery revitalizes precolonial practices and retrieve realms of experience that existed in Native communities before the disruption of Europeans. Indigenous anthropology promotes the accessibility and relevance of this knowledge to descendant communities.

Such projects are ideally designed for and with the communities most impacted by the knowledge being produced. This prevents one-sided, often Western-centric research. "When diverse individuals and communities are part of the process of utilizing science to produce interpretations about the past, they are more able to see themselves and their futures in those stories" (Atalay, 2020, 10). The most productive bioarchaeological ontology emerges when select Western and relevant Indigenous perspectives are braided

together, weaving diverse approaches, value systems, and relationships to land and lived experience (Atalay, 2020). Braided too with life history, which is already an intricate tapestry of biological and social disciplines, these frameworks are mutually advantageous in discovering human pasts. Bioarchaeologists using this woven model are positioned to format research and interpretations that can be applied to real-world problems, such as inequality and health disparities. Indigenous anthropology has the additive benefit of modelling ethical scientific conduct in studies of marginalized people.

In the Americas, Hawaii, and Australia, where Indigenous communities have suffered greatly from the oppressive and violent acts of colonization, the remains of Ancestors – those traditionally studied by bioarchaeologists – have considerable significance. They are symbols of cultural identity that, when held by Western institutions, also represent colonial subjugation (Deloria, 1988, Mihesuah, 2000). The control of Ancestral remains is essential to revitalizing and empowering Indigenous communities. The body is central in decolonizing efforts, relating back to Indigenous concepts of bodily wisdom, autonomy, and embodiment. By gaining control over Ancestral remains, Indigenous peoples can reassert their sovereignty and identity within and outside of Euro-American society. Embodiment also constitutes a sense of identity and knowledge through the way in which human bodies experience the world and become vessels of knowledge (Katzenburg and Grauer, 2018).

Alongside other stressors, colonization has been integrated into the bodies of Indigenous people and historically determined the treatment of their bodies, both in life and in death. Indigenous anthropology is therefore unquestionably necessary in the

assessment of Native remains in decolonized North American bioarchaeological practice or life history studies. Without the consented experiential knowledge and theory of Indigenous approaches, the assessment of colonial outcomes are only partially informed (Katzenburg and Grauer, 2018). A life history approach to understanding life strategies, adaptation, and constraints will be void without the histories known to Indigenous communities. Understandings of health are also recognized and interpreted differently in these worldviews. In a discipline aiming to decolonize its practices, there is a crucial role for Indigenous anthropology to play in conducting bioarchaeology, including life history work.

Indigenous Anthropology Scholarship in Bioarchaeology

Life history bioarchaeology is a method of interpreting history as it is inscribed upon the remains of those who experienced it. How these narratives are embodied, and from what knowledge base is used to translate them, is an essential conflict for anthropologists. Life history bioarchaeology attempts to develop the most accurate biocultural record through a multidisciplinary, multidimensional understanding of human remains. Indigenous-life-history, then, helps establish the voice and orientation of this scientific narrative, preventing a singular, Western understanding of the skeletal record, particularly when assessing Ancestral remains.

Both Indigenous anthropology and life history reassess previous bioarchaeological knowledge. Western theories and narratives have perpetuated false histories within the North American past, particularly in relation to the experience and survival of Native

Americans (Larsen, 1994, Rakita, 2006, Wilcox, 2009). Criticisms have been leveled at skeletal analyses due to its historic decoupling of Ancestors from their identities or the input of living descendants. “Terminal” narratives tried to support the absence or cultural destruction of Native people in North America. Focus was placed on enculturation, colonial valorization, and disease as agents of demographic decrease. These models did not consider organized violence and dispossession, so biocultural responses to these factors of colonialism could not be accurately assessed. They also functioned alongside essentialized “vanishing Indian” salvage theories for determining how to study Native Americans, prioritizing those with limited European interaction as more “real” while remaining blind to the continued lifeways of contemporary Native people.

Before the integration of Indigenous anthropology, other theories attempted to reexamine these narratives, but the discipline was not widely receptive. A “direct historical approach” connected pre- and post-European arrival population histories. This approach was deemed obsolete due to what Western scholars believed were untenable demographic transformations caused by disease and acculturation, although Ancestral-descendant continuity has been known by Indigenous populations. Postprocessual theory also did not fully realize a renewed perspective. Although it supported reflexive thought and the recognition of scientific subjectivity, ideas of cultural erasure and the dichotomy between “prehistory” and “history” persisted (Atalay, 2006, Wilcox, 2009). While the discipline has not abandoned these theories in its production of knowledge, bioarchaeology still grasps for new paradigms to redirect its previous (mis)understanding of the past.

Misinformed histories are revisited and revised with Indigenous anthropology, addressing many of traditional bioarchaeology's faults and failures (Subramaniam, 2016, Smith and Bolnick, 2019, Smith, 2021). It incorporates ethnicity theory, which advocates for the persistence of Indigenous groups as agents of culture and resilience. Skeletal samples of bioarchaeological populations are no longer viewed as cross-sections of singular, isolated communities but are instead reincorporated within a broader biocultural landscape alongside the living. Indigenous anthropology accounts for physical and structural violence rather than ignoring the impact these factors have on individual and group life experience (Wilcox, 2004, Atalay 2006, Simpson and Smith, 2014). Strategies for survival are framed by an agential population. The approach is also informed by the perspectives of contemporary Indigenous people, who have valuable knowledges of Indigenous lives, histories, and Ancestors (Kovach, 2010, Nicholas, 2010). All these components are essential to reevaluating skeletal remains in a bioarchaeological context.

Though critique has been directed towards Indigenous anthropology by typically "objective" white settler-scholars, this approach does not limit or displace scientific theory, nor is it a simplistic revisionist model guided only by religious dogma. Rather, it reintegrates Indigenous history, remains, materials, and research with contemporary Indigenous perspective and peoples. Such work has, until recent decades, been largely underrepresented in the labor of bioarchaeology, but the discipline has begun to witness an amplification of Indigenous voices as members of these communities interact with the field (Ferguson, 1996, Wilcox, 2009, Colwell, 2010, Cerezo-Román, 2015, Atalay, 2019). As with writing back erased biosocial history through postcolonial studies, Indigenous

anthropology articulates the survival and resistance of Native American and First Nations groups studied in North American life course bioarchaeology. Indigenous-life-history thus deconstructs Eurocentric narratives while reconsidering accommodation, conflict, adaptation, and resilience on the biosocial stage of colonial interaction.

A Potential Site for Indigenous-Life-History: the Ancestral Southwest

The Ancestral Southwest is a region that has endured decades of misinformed bioarchaeological knowledge-making. It was a primary location for training and methodological development among biological anthropologists, as it contains thousands of bioarchaeological sites. Poor practices flourished for nearly a century by scholars and looters alike, creating a practice of anthropological study that was unconcerned with the lives or opinions of contemporary Native people. This malpractice led to the denouncement of the field by Native communities, including descendants of Ancestral Southwestern populations. Later, activists would engender legislation against the exclusionary excavation and research pervasive in the discipline.

Early studies were often typological, reductionist, and processual without historical or regional contexts, the antithesis of life history studies or Indigenous anthropology. They rarely addressed questions or concerns of Native people. "Without the explicit collaboration and textured layering of the voices of those most closely related to the people studied, [research was] destined to create scenarios that, although grounded in theoretical modeling and scientific empirical observations, [were] wanting in relevance and significance" (Martin, 1998, 177). More recent work, including collaborative research, has

supported an Indigenous anthropology framework informed by religious or traditional insights containing cultural and historical information. When the community is comfortable sharing them, these insights can inform bioarchaeological interpretations. Alternatively, bioarchaeological discoveries can be useful in corroborating the oral histories of Native groups (Varien and Potter, 2008).

Collaborative work in the Southwest incorporates oral tradition and history to understand time, space, and knowledge in the past and social present (Anyon et al., 2000). These components of history are essential, too, in assessing life history. Collaborative work benefits life history studies specifically by rendering more complete stories of the past, dismantling colonial mythologies, and guiding the field to a more resilient consciousness (Wilcox, 2009). Bioarchaeological science and traditional knowledge are braided as "intersecting magisteria," or domains of authority, to explore history and the meanings of places, objects, practices, and peoples (Colwell, 2010). This research recognizes scientific knowledge does not have an infallible, privileged view of the past that elevates it over oral traditions. Rather, it is one of many ways of knowing the past. "This does not suggest that either expert is granted unlimited entitlement to interpretation, but rather that each brings [their] own perspectives and knowledge to bear on the places and things that archaeologists and Indigenous peoples both care deeply about" (Colwell, 2010, 339). A collaborative turn to the sacred thus creates more informed bioarchaeological work alongside Native communities.

Projects in the Southwest directed by Native perspectives and scholars have done important work for the bioarchaeological discipline. Native anthropologists are the primary

authorities for integrating informed perspectives into Indigenous-life-history research. Models of skeletal analysis are primed for relevant knowledge-making when they are positioned alongside historical, cultural, and experiential evidence. In the Southwest, the perspective of Native scholars has supported a history of social interaction, culture change and continuity, and resistance in the period after European arrival (Wilcox, 2009). Involving Native scholars also avoids the unintentional co-opting of Native histories or the creation of inaccurate narratives, such as passive victimization or a fixation on dark tales of cannibalism and warfare in this region. Instead, Native scholarship seeks dynamic and informed Indigenous-life-history stories about Ancestral populations and explains how periods of colonialism or violence were tempered by dynamics of adaptation and resilience.

All projects employing a layered Indigenous-life-history perspective have a hybrid strength to their argument, a balance of diverse perspectives that lend validation and verification to each other. This augmented approach can likewise extend to important political and ethical concerns. Resulting historical insights can help restore agency, humanity, and identity to Ancestral remains and their relations. Both frameworks of anthropological knowledge production visualize the resilience and survival but also stressors and suffering of Indigenous populations in colonial systems. Indigenous-life-histories consider the implications of stress as potential instances of harm caused by colonization. These harms are further recognized within institutions that have perpetuated not only structural violence but continued Native dispossession through the removal and retainment of Ancestral remains. Through an engaged, activist notion of bioarchaeology, an Indigenous-life-history approach may conceive of Ancestral remains within colonial

institutions as the vectors for decolonizing science. Decolonized research can take the form of through informed, informative work and the activism of repatriation.

An Essential Correction: Collaboration, Repatriation, and Sovereignty

Indigenous anthropology does important work for the politics of bioarchaeology, as the implications of life history analysis reveal the damages wrought by colonial systems. Violence, survival, and death are aspects of experience that have undeniably impacted the life histories of Indigenous peoples after the arrival of colonial powers. The repercussions of colonial oppression and violence include centuries of trans-generational trauma that put additive pressures on North American Native communities. Opportunities for these communities to have active roles in the creation of anthropological knowledge is part of the process of healing from historical traumas. So, too, is the act of repatriation. Perhaps one of the most important directives that bioarchaeology has followed, with the compass of Indigenous anthropology, is the active work of repatriating Ancestral remains (Turnbull and Pickering, 2010, Colwell, 2010, Hardie, 2019, Atalay, 2020).

Collaborative bioarchaeological work conducted before repatriation demonstrates the potential for reciprocal relationships established by the communication processes of Indigenous anthropology (Colwell, 2020). While Indigenous anthropology advocates for Native-involved bioarchaeological research, it also promotes the return of Ancestors to communities that do not seek additional knowledge or the further scientific study of their remains, regardless of how research is conducted. This is not just an act of decolonizing the greater institution; it is a correction of great political and ethical implications in the

discipline of anthropology, supported by (specifically in the United States) the legislation of American and Native American peoples (Lambert and Walker, 2018, Hardie, 2019). Laws and activism promote critical reflexive, informed collaborative work, and repatriation projects that have grown in bioarchaeology over the last thirty years, following the passage of NAGPRA. Repatriation is a stage for productive dialogue and mutually-beneficial knowledge production. Discussions between anthropologists and tribal representatives are also supportive of ethical concerns within bioarchaeology.

> Scholarship that has stemmed from NAGPRA and other similar legislation has resulted in a more nuanced, socially conscious bioarchaeology… The principles of North American bioarchaeological ethics – respect, transparency, inclusion, collaboration – thereby serve as an essential foundation from which to shape a locally situated ethical praxis. (Agarwal and Glencross, 2011, 58)

Indigenous-directed ethics are an important corrective in missions to repatriate Ancestors. Racist traditions of physical anthropology (before the turn towards a less racially typological "biological" anthropology) intersect with repatriation. Recent discourse on race assessment in bioarchaeological settings has turned against racialized identities of Native remains and challenges the contestability of modern descendants to claim relationships, as in the instance of the Ancient One. Such claims are often dependent on racial terminology and craniometrics to bioarchaeologically determine affiliation, even when remains are located on land recognized as traditionally Indigenous (Kakaliouras, 2008). "Indigenous archaeologists, Native people, and some bioarchaeologists, however, perceive the use of cranial metrics to draw a boundary around the North American ancient past as an ideological assault on repatriation in general and Native American

indigenousness in particular" (Kakaliouras, 2008, 45). Debate continues about the value of racialized analyses, as Indigenous constructs of identity and relatedness are obscured by Western colonial models.

Collaboration and dialogue have increased as bioarchaeologists and Native groups work towards repatriation, but "few osteologists who have participated in repatriation processes have published on their specific experiences, nor have there been ready venues, especially in physical anthropology, for such work" (Kakaliouras, 2008, 46). This type of literature should be encouraged within the Indigenous anthropology framework. Publications on repatriation respect the authority and rights of descendant communities and recognize the importance of active anthropology alongside standard brands of research. Just as any procedural study, repatriation should be recognized as an osteological and bioarchaeological practice and be included in published materials. Publications promote the continued work of repatriation and inform other anthropologists of its importance. It is further a necessity for new anthropologists to be educated on these topics, legislation, and how to conduct informed research (Kakaliouras, 2008, Kakaliouras, 2012**,** Hardie, 2019). Lacking this literature or education only reasserts the dominance of Western views on the topic of repatriation.

New theoretical approaches to repatriation bring anthropological and Native perspectives into closer symmetry. While bioarchaeology and Indigenous anthropology can be braided, there still exists an epistemological gap between Western scientific and Native American perspectives, and this is felt acutely in the legalities and interpretation of repatriation laws (Kakaliouras, 2012, Hardie, 2019). Bioarchaeologists must challenge

arguments that Indigenous anthropology is the work of "religious fanaticism," "mythic subjectivities," or "loss" for anthropological research. They must resist privileging traditional anthropological thought – such as anthropometric dissimilarity or genetic relatedness – over Native claims based on oral histories or the location of Ancestral cemeteries. This appeal to elevating Western science is not only adverse to Indigenous anthropology but to biocultural and life history anthropology as well. It discounts the known cultural and historical context provided by descendants or other knowledge keepers and argues for the objectivity of a known subjective Western scientific framework. Western European anthropology cannot assume authority over the narratives of Native people as has been permitted in the past (Kakaliouras, 2012).

Power and sacred meaning were disconnected from descendant communities through colonization and dispossession (Mihesuah, 2000, Kakaliouras, 2012). Sovereignty was disrupted by looting and scientific gatekeeping practices, though connections and responsibility of many skeletal "collections" were still held by descendant groups. Indigenous scholars continue the traditional stewardship of teaching, examining, learning, and protecting their heritage through access to the materials and Ancestral remains linked to them. Repatriation has thus been described as a decolonizing process of self-determination and self-representation, but it also an "expression of kinship and a means of producing collective memory and identity" for Native people who are able to "remember, respect, and rebury their ancestors" (Krmpotich, 2010, 157).

Reducing repatriation to the control of historical knowledge neglects the personal injuries inherent to dispossession or the healing enabled by the repatriation of Ancestral

remains. Wrongful possession of Ancestors has prevented Native descendants from providing mortuary rites to protect and respect their kin or exist within the cosmology specific to their communities, actions that allow for collective remembrance (Ferguson, Anyon, and Ladd, 1996). Disinterred remains can also be implicated in the well-being of Ancestors and living communities alike. Physical and spiritual health are often linked to the care of Ancestors, and many Native belief systems characterize the "preservation" or "storage" of Ancestral remains within institutional walls as not only disrespectful and unwarranted, but harmful. Proper burial is necessary to reintegrate Ancestors with communities, affirm kinship and identity, and reinforce collective memory (Krmpotich, 2010). Repatriation itself can therefore be a co-production of kinship and memory, facilitated by Indigenous-life-history that emphasizes population continuity and kin relations between the living and dead.

Ancestral remains embody past persons, but they also provide evidence to the devastation, dispossession, and scientific objectification of Indigenous peoples. Enacting repatriation through Indigenous-informed bioarchaeology promotes reflection and sensitivity towards the treatment of Native remains (Kakaliouras, 2012). It increases the visibility of decolonization and informed research, cooperation between institutions and Native communities, and larger projects of healing. The involvement of Native representatives has led anthropologists to formulate meaningful research questions and continues to steer the discipline towards meaningful co-conspiration and engagement with current sociopolitical issues. Repatriation, as Indigenous anthropology, thus achieves the ultimate goals of an active, impactful bioarchaeology.

Repatriation with and by Native people has given Indigenous communities the change to rejoin and reinter Ancestors wrongfully held by unaffiliated institutions. The invaluable efforts made by Native activists, anthropologists, and non-Native proponents of Indigenous anthropology do similar important work, whether it be through research or advocacy for tribal sovereignty. Indigenous anthropology argues that the agency for research conducted on any approved remains can and should be influenced by the communities most closely related to them. In consented bioarchaeological research, and more specifically in life history analysis, incorporating Indigenous teaching, learning, and knowledge systems of the community or nations from which remains originate is an important step for better research. Ethical conduct in research is a responsibility for bioarchaeologists, and the protection of Ancestors is an act of Native sovereignty over their past, present, and future. Implementing activist-oriented perspectives such as braided Indigenous-life-history will help bioarchaeologists continue producing informed, informative work.

Towards a Better Bioarchaeology

Biocultural theory in bioarchaeology – emphasizing the dynamic interaction between people and their sociocultural and biological environments – enabled a transition from racialized typologies and processualism to an emphasis on political, social, and economic contexts that considered issues of inequality and structural violence. Current bioarchaeology builds upon half a century of biocultural approaches by incorporating critical analysis and activist practices, whether this be global or domestic. This shift has

carried bioarchaeology to its most relevant applications as a science of humankind. Contextualized, critical bioarchaeology contributes to multidimensional analysis of identities and embodiment within life history processes. To continue producing knowledge about the past, bioarchaeology should likewise include the perspectives of those communities long studied and marginalized by its practice (Colwell and Ferguson, 2010). Location- and community-specific knowledge is deeply informative for the study of complex interactions and life strategies, which are the essential components of life history research.

Life history bioarchaeology is capable of visualizing individual and population-level experiences of resilience and constraint through the assessment of skeletal remains. It involves the biocultural assessment of relationships guided by understandings of human adaptation. There is a potential of bias, however, when interpreting non-Western pasts through Western frameworks, even life history. These inherent complexities and tensions are why life history is a rewarding and worthy endeavor and why insights from other perspectives, as with Indigenous anthropology, can fill in the gaps. Discoveries made through their integration can be relevant to modern populations in explaining current disparities and help direct problem-solving to mend them. A braid of the two multidisciplinary perspectives is further capable of incorporating even more strings of knowledge to uncover past life strategies.

Indigenous anthropology and Indigenous-life-history are open to investigation by all bioarchaeologists who can critique and remedy a Western colonialist bias in traditional bioarchaeology, which alienated Indigenous perspectives. Indigenous-life-history analysis

thus benefits from the inclusion of traditions and oral histories held by descendant communities when these are consented and appropriate for use. Using decolonized, informed Indigenous perspectives to understand human biocultural experiences, ontologies about life and death, stress, agency, relations, identity, and social contexts appears to be the most effective route to reorient anthropology from a colonial practice to a respectful co-construction of the past. Bioarchaeologists from both Native and non-Native backgrounds can benefit from the expanded knowledge set of these interwoven perspectives. So, too, can the public to which this knowledge is conferred.

As bodies carry with them the life history of social and biological experience, the bones studied in bioarchaeology also have a "death history" to be considered – they embody not only the lives of past peoples, but the past of anthropological practice. Their reconsideration through an Indigenous-life-history lens can help uncover and make clear these narratives, in doing so elucidating how bioarchaeological work should be conducted in the present and future. Ancestral remains are also a site of healing, which can be done more effectively with the inclusion of Native scholars in anthropological spaces where they have often been excluded. A generation of Indigenous anthropologists, both Native and non-Native, has recently emerged and created new opportunities to direct research and publish Indigenous-oriented interpretations in bioarchaeology as well as repatriate Ancestors to their descendant communities (Atalay, 2020).

It is further necessary to frame stories of Indigenous persistence, survivance, and continuity in ways that are not neutral (i.e., passive, agentless survival without the struggle against brutal colonialism) or negative (i.e., survival rendered through victimization,

oppression, and diminution that prevents agency or authenticity). Bioarchaeology must resist a continued legacy of essentializing or stereotyping Indigenous lives through victimizing or erasing their continued existence. There is great potential to corroborate Indigenous agency, resistance, and resilience through Indigenous-life-history, just as archaeology has demonstrated adaptation in the blending cultural materialities in colonial survivance strategies (Gulliford, 2000). Indigenous-life-history bioarchaeology can support Indigenous narratives of persisting culture and community while also recognizing the undeniable violence of colonialism (Temple, 2019).

Conclusions

The proper enactment of Indigenous-life-history requires a movement from critical discourse towards praxis for this work to be effective (Denzun et al., 2008). This application will incorporate radical bioethics, such as informed consent and refusal, and produce decolonial research that helps to resolve current Indigenous problems and questions. This framework protects Indigenous knowledges, whether they be sciences, histories, medicines, literatures, or philosophies, from institutional appropriation. Ultimately, Indigenous-life-history cultivates informed narratives, knowledge production, and sovereignty which have been returned to Indigenous and descendant communities.

By introducing a potential model of braided frameworks, this project engages with sustained Indigenous literature, scholarship, knowledge, and thinking. It does not seek to speak for or advance Indigenous theory but rather cite and apply its scholarship in a discipline where Indigenous perspectives have been critiqued and rejected by some,

regarded as uninformative by others. Indigenous-life-history bridges Indigenous scholarship of many forms to bioarchaeological literature in a non-erasive attempt to decolonize the discipline. None of the Indigenous perspectives are “new” or “discovered” by this framework. Rather, this project hopes to articulate an integration that can be valuable to the bioarchaeologists who do not stand in these standpoints, identities, or experiences while also presenting an opportunity of engagement for Indigenous peoples with this discipline.

In a profession always seeking new knowledge, the introduction of varied perspectives is a primary way to access novel and vital understandings. Bioarchaeology and life history theory already draw on the scholarship of many diverse fields and their practitioners by, as previously alluded to, “braiding knowledge” (Atalay, 2019). This accumulation of varying evidence is how life history theory has become an integral tool in studies of the human past. Even better science can be produced by involving the perspectives and practitioners of Indigenous anthropology. A collective effort to improve knowledge production and what is known begins with changing how we come to know. An Indigenous-life-history is a productive, advantageous tool for such advancements, including reparations to Indigenous communities the field has previously harmed.

CHAPTER SEVEN: THE ANCESTRAL SOUTHWEST, REVISITED WITH RESPECT

To understand the benefits of applying the non-traditional and innovative theories, methods, and frameworks addressed by the last six chapters, it is appropriate to outline a region in which their application would be valuable. The Ancestral Southwest has a deep history of Indigenous inhabitance and European colonialism as well as anthropological study. Foregrounding our understanding of its past within the profession, bioarchaeological research has been a project in the Southwest for over a century. The data and conclusions produced by anthropologists have not often considered the previous knowledge or history held by Indigenous tribes of the region, even when vast ethnographic documentation exists.

After reviewing significant research conducted with remains from Ancestral Pueblo populations, it is clear where past failures have been a result of poorly contextualized or uninformed research models, oversights that may be remedied by different approaches. The colonial contexts and ethical concerns inherent to anthropological projects in this area also demonstrates why particular types of care must be taken in conducting research. While these alternative theoretical and methodological foundations are meant to facilitate more accurate anthropological work, their complimentary function is to act as preventatives to causing continued harm on Ancestral and present-day Native communities and promote reparations.

Acknowledging the anthropological and colonial past of the Ancestral Southwest, bioarchaeologists who continue work in the region must establish a program for conducting research that recognizes and accommodates for these histories. Revisiting the Ancestral Southwest with respect necessitates a framework that incorporates anthropological and Indigenous approaches into future research. A model for the Indigenous-life-history project may present the most applicable, comprehensive layout for bioarchaeological research. Demonstrating this potential through a case study, the research components and analytical foundations for a future project with the Ancestral and descendant Zuni Pueblo is presented. This model considers individual life histories, population experiences, relations, identity, cosmologies, circumstantial changes, resilience and constraint, and the influence of colonialism on stress and differential health.

The Ancestral Southwest: An Anthropological History

The archaeological and ethnographic history of the Southwest is too extensive to review in passing, but it represents a massive portion of work conducted in North America (Gumerman, 1994, Simons et al., 1989, Mitchell and Brudson-Hadley, 2001, Cordell and McBrinn, 2016). The Hemenway Southwestern Archaeological Expedition, directed by Frank Hamilton Cushing, is the first formally organized research project in the Ancestral Southwest that explicitly included biological – then known as "physical" – anthropologists (Rakita, 2006, Martin, 1998, Cushing, 1890). In 1888, this group conducted excavations in Heshotauthla, an Ancestral Zuni site that was inhabited from approximately 850-1275 CE,

from which skeletal remains were removed. Between 1917 and 1923, excavations were initiated at the Ancestral Zuni sites of Hawikku and Kechiba:wa by Frederick Webb Hodge, and remains from these settlements (occupied from 1400-1680 CE and 1425-1680 CE, respectively) would later be added to those already amassed at the Smithsonian Institution (Rakita, 2006). It was at these early excavations that in-field identifications of age and sex were often made by individuals who had received no training in anthropology. No systematic plan for the disposition or study of remains or associated artifacts was developed for future research projects. Important recordings on growth, development, and relative health were also absent from this work.

In the small quantity of early bioarchaeological work published on Southwestern populations, most data focused on measurements and singular or small groups of crania that were typologically analyzed (Reed, 1963, Simmons et al. 1989). Little to no attention was afforded to the post-cranial skeleton unless in relation to stature estimates. Conversely, cephalic indexes, cranial deformation, and racialized cranial categorization became the main topics of publication. Larger-scale anatomical comparisons were made between the Ancestral population to communities living in the Southwest, populations elsewhere in North America, and other bioarchaeological samples (Reed, 1963, Rakita 2006). Racialized research questions involved craniometrics to demonstrate “greater intellectual potential” and visualize the appearance of “advanced races” of Native peoples who “replaced” earlier groups (i.e., the transition from “Basketmaker” populations to “Pueblo”). These projects were performed by a few often cited and prolific contributors to early twentieth century physical anthropologists, namely Aleš Hrdlička and Earnest Hooton.

From 1899 to 1902, Hrdlička conducted annual visits to the southwestern United States and northern Mexico. His projects during this time were anatomical and involved both skeletal and living populations, and he published prolifically on the region (Hrdlička, 1902, 1909, 1931, 1935a, 1935b, Hrdlička and Bell, 1935). Starting in August 1899, Hrdlička's participation in the Hyde expedition for the American Museum of Natural History excavated sites in Chaco Canyon (New Mexico) along with surveys and visits to the Navajo, Ute, Apache, Yuma, and Pueblo peoples among many others. Often focusing on "somatological" surveys, Hrdlička was interested in the comparative study of population anatomy to posit theories about evolution and classification of different racial-ethnic groups in the region. He also conducted another of the first organized excavations of human remains in the Ancestral Zuni site of Pueblo Bonito (828-1126 CE).

During this period, Hrdlička had a working relationship with Professor W. H. Holmes, the head curator of anthropology at Washington's National Museum and later chief of the Bureau of American Ethnology. All human skeletal material received by the Smithsonian Institution during this time was stored in the Army Medical Museum. Subsequently, the gathered remains were rarely accessed for study and were inadequately cared for by the standards of both modern anthropological and traditional Indigenous practice. Any projects that involved the procurement or study the remains gathered by Hrdlička were performed without permission by the descendant communities, sometimes to their vocal distress and horror (Pullar 1995, Hrdlička, 1930b, 1943). It is not surprising that Hrdlička's was apathetic towards Indigenous people's concerns or anguish about the disruption of their dead, considering his engagement with racial typologies and hierarchies

as well as general racism towards Native and African peoples (Pullar, 1995, Rakita, 2006, Hrdlička, 1930a).

Earnest Hooton worked contemporaneously and often in accordance with standards set by Hrdlička. In his skeletal studies of Native remains, Hooton examined change over time as recorded by pathology, morphology, and metric data. Hooton brought more focused and regional bioarchaeological questions to the field as he integrated archaeological practices with biological anthropology (Beck, 2006, Reed, 1963). His report on the Ancestral Pecos Pueblo (1930) skeletal sample was one of the first major contributions to physical anthropological literature in the Southwest. Pecos, established around 1300 CE, was occupied by Ancestral populations as well as those enduring Spanish missionization and beyond, until 1832. At the time of Hooton's research, the only other publications pertaining specifically to Southwestern physical anthropology were Hrdlička's reports on observations among living Indigenous people. He was aided, however, by chronological categorization of burials by archaeologist Alfred Kidder and from this foundation constructed a demographic research model (Kidder, 1924).

The Pecos Pueblo excavation solidified Hooton's bioarchaeological approach in which he studied physical remains of humans with their associated archaeological context. Although predated in his excavations by Kidder, Hooton was the first to measure his own series of "Arizona Basketmakers" and "Post-Basketmakers" for comparative analysis. Hooton studied change over time as recorded by the pathology, morphology, and metric data of these remains. Age at death, sex, stature, and health were documented for each individual. Hooton also recognized the importance of preserving remains alongside context

and put this into practice by recording contextual data (Beck, 2006). Pecos was the first major archaeological sample to be so fully studied (Beck, 2006, Reed, 1963). Most bioarchaeological projects in the Southwest through the 1960s were made in response to Hooton's Pecos study and either blindly followed or fought against his arbitrary “racial” types and typological conclusions. Hooton’s classification of Native remains within racial typologies did not seek critical explanations for the sources of variation (Beck, 2006, Hooton, 1973). Much of Hooton’s scholarship is now seen as engaged in racial or eugenic science, following the theoretical trends of his time.

The tradition of extracting and studying material – cultural and biological – from the Ancestral Southwest continued through the mid-twentieth century, characterized by similarly typological studies (Martin, 1998). “While bioanthropologists continued to conduct research on excavated skeletal materials, often these analyses resulted in brief appendices in larger archaeological site reports” until the late 1960s (Beck, 2006, 104). In the 1970s, more extensive skeletal samples were recovered from across the Ancestral Southwest, resulting in craniometric studies predated by those of Hrdlicka and Seltzer (Buikstra and Beck, 2006). The 1980s witnessed an expansion in research topics, namely paleodemography, nutritional stress markers, and infectious disease. After this resurgence in Southwestern bioarchaeology, researchers completed studies featuring previously excavated skeletal samples. Interest in biological distance returned to the forefront of research projects, with a concentration on first long-distance migration, then short-distance or marital locality studies. These projects were conducted using material culture as well as skeletal remains and often focused on sex-relational migration patterns. Advancements on

quantitative trait theory and analytical methods allowed for biodistance analyses within population genetic frameworks. New paleodemographic, paleopathological, and large-scale, multisite, interdisciplinary projects surged to create a renaissance of research beginning in the 1990s.

Recent Anthropological Research

At the transition between the twentieth and twenty-first centuries, "there [was] a dearth of Southwestern articles in physical anthropology journals. This is part of a general decline in publications reporting on the study of Native American remains" (Stodder, 2008, 3, Weiss 2006). Though in part due to laws about repatriation, the practice of excavating and studying Native American remains has declined also due to new disciplinary standards around ethics and consultation with Indigenous groups before such work is conducted. The past thirty years has, however, seen new projects that consider the variation, process, agency, and biocultural experiences within Ancestral populations. Bioarchaeologists have also reassessed previous projects using new methods such as biodistance, formulating new approaches that consider the biocultural processes of genetic inheritance.

Health studies continue to advance the understanding of paleopathology in the region. Stodder's (1992, 1994, 1996, 2012, 2015) extensive research in the pre- and post-Spanish contact Southwest provided insight to the changing dynamics of relative health and disease as experience, environment, and interactions shifted. Palkovich (1980, 1985, 1994) considered both skeletal and mortuary remains in work concerned with historic

populations in the Eastern Pueblo landscape. This research supported a history of population fluctuation from 1540-1910 that was not exclusively related to epidemics. Instead, Stodder and Palkovich both considered the violence of Spanish missionization and militant invasions as catalysts for declining populations. The projects also documented the amalgamation of disparate community groups to larger pueblos during periods of population decline, creating heterogenous populations often more vulnerable to disease spread. Recent health explorations by Ham (2018) and Lo Presto (2018) studied differential survival, growth, and development trends in response to systemic stress. Both projects focused on life history consequences of stress among population samples in Pueblo Bonito and Hawikku, expanding from simplistic models of identifying stress responses and found higher instances of adverse health outcomes and higher mortality rates in generations enduring extreme environmental stressors.

Mortuary practices also factor into new bioarchaeological analyses. Beyond Palkovich's Arroyo Hondo project (1980), Howell (1995, 1996) explored the biological and mortuary contexts of Ancestral Zuni samples to identify potential leadership and gender roles during initial European interactions at Hawikku. More expansive studies of Chaco Canyon were performed by Akins (1986, 2001) and Marden (2011). Akins provided specific burials of interest with details on grave contents for possible leaders at Pueblo Bonito, discussing social organization as demonstrated by mortuary practices, particularly among potential elite burials. Marden's work involved the taphonomy, paleopathology, and mortuary variability in Chaco Canyon. The project reassessed the idea of status and health relationships between two disparate groups at Pueblo Bonito. Rather than equating

health outcomes to status, Marden presented two possibilities for how differing stature manifested between these groups: variation may have been a consequence of ethnicity and genetic separation, or differential nutritional access and stress that co-produced development alongside genetic influences.

Biodistance studies provide more relational analyses to these communities. Corruccini (1972, 1998) used metric measurements and discrete cranial and dental traits in studies of Pecos, Puye, and Hawikku skeletal populations oriented towards gene flow. Puebloan communities formed several disparate populations within a single interrelated population. Cultural factors such as kinship-based, nonrandom marriage systems determined the nature and extent of contact and relations between villages, but Corruccini found no evidence of European admixture in the Hawikku population. At Hawikku, Howell and Kintigh (1996, 1998) further explored the archaeological identification of kin groups using mortuary evidence and biological data to consider gender and kinship through biodistance. Their studies provided support to Indigenous understandings of relation within Ancestral populations. Akins' (1986) multivariate biodistance analysis of the Chaco Canyon cranial samples demonstrated the existence of two biologically distinguishable groups in the Pueblo Bonito burial sample. The biological distinctiveness of the Pueblo Bonito population from contemporary Pueblo peoples was also clear.

Stojanowski and Schillaci (2003, 2006) continued the process of reconsidering biological relatedness in the region. Their work incorporated Puebloan histories and ethnographic records to analyze postmarital residence and biological variation at Pueblo Bonito, employing phenotypic approaches to understanding patterns of intracemetary

biological variation. The research supported earlier theories that two populations were buried in different cemetery organizations, represented by distinct northern and western clusters. Schillaci (2003) further examined the development of population diversity within Chaco Canyon more broadly. The regional study applied a craniometric biodistance model to demonstrate the diversity within the Ancestral Pueblo region which may have influenced the community, familial, and individual identities represented. Schillaci's work further supported the model of community mobility known through oral histories.

While many of these works are supported by sound analysis and incorporate multiple lines of evidence, there are instances of absence in theory or method that prevent these works from reaching holistic and informed conclusions. It is within this context of research potential in which a new prototype for bioarchaeological examination can be applied. Theoretical foundations can be primarily decolonized using feminist, queer, and Indigenous approaches. These perspectives can augment the analysis of lived experience through the data of biological traits, paleopathology, indicators of relative stress and health, kinship relations, and markers of identity alongside the post-life circumstances of the mortuary record. From these multidimensional explorations of lived experience, an Indigenous-life-history model of bioarchaeology can reach contextualized deductions. In the aftermath of its reductionist, presumptive research past and abhorrent treatment of Indigenous people, an Indigenous-informed bioarchaeology project is of particular value in the Southwest. Specifically Indigenous perspectives contribute to the traditionally known history of this region. This trajectory of research can produce work conducive to speaking alongside rather than *over* or *for* Indigenous beliefs and knowledge previously

unseen in the field. Such work may reinforce the oral histories held by contemporary Pueblo communities or further support the ethical treatment of remains and burials.

A Consideration of History and Ethical Concerns

The Southwest has its own history outside of anthropological research which must be accounted for in any scientific investigation conducted within the Ancestral past. With a documented record of intensive colonial abuse and violence, Spanish colonialism among Pueblo peoples is an essential historical context that must frame any work conducted with the remains of those impacted by it.

Colonialism does not factor into all research models in the region. The first inhabitants of the Ancestral Southwest were likely nomadic, responding to Holocene climatic changes before transitioning to hunting and gathering around 7000 BC. Agriculturalists began establishing permanent settlements around 200 AD with consequential reliance on stable, cultivated crop sources while hunting formed another element of diet (Stodder and Martin, 1992, Martin, 1994, Osterholtz and Martin, 2015). Between 700 to 1150 AD, increasing aggregation created larger communities of groups later identified as Ancestral Puebloan peoples. "Around 1150 to 1200, several developments in the Southwest signaled major changes in both political structuring and population aggregation… By 1350, many of the groups leave the northern areas of the Southwest and migrate and create large, dense settlements along the Rio Grande in New

Mexico," where Spanish conquistadors would later meet these reorganized communities (Osterholtz and Martin 2015, 20).

Spanish involvement in the Ancestral Southwest began in the 1540s with a series of entradas known to incite particularly acute instances of violence between Indigenous and settler-colonial groups. Expeditions led by Coronado (1540-1542), Chamuscado-Rodriguez (1581-1582), Espejo (1582-1583), Castano de Sosa-Morlete (1590-1591), and Don Juan de Onate (1598) each exemplified the religiously-fueled violence of Spanish expansion into the Indigenous landscape they attempted to claim for their own (Weber, 1994). Spanish-enacted massacres, physical and sexual violence, socioeconomic deprivation, and the dispossession of land characterized this half century.

The period of permanent Spanish colonization and missionization began in 1610-1680, representing a time of religious suppression and material tribute requirements, later leading to resource strain for Indigenous population before the pan-Pueblo rebellion in 1680 (Weber, 1994, Wilcox, 2009, Ferris et al. 2014, Resendez, 2016). During the seventeenth century, Spanish authorities and religious figures often attempted to regulate Native lives in areas where they had established Christian settlements. Spanish religious zeal, ideas of divine directives, and intolerance spurred Christian projects and soldiers' attempts to conquer Indigenous populations. Spanish colonizers viewed themselves as being the stewards of humanity and religion, Indigenous "infidels" as being inferior, even subhuman, and their aggression as granted by religious righteousness. Beyond tactics of overzealous conversion, Spaniards frequently resorted to militarized tactics of submission. The Pueblo peoples were spared some of their more explicit acts of violence, such as the

use of large dogs to kill and feed on the remains of other Indigenous people, but systems of violence were near universal through the Southwest (Miranda, 2010).

State-sanctioned militant Christianity allowed for the brutality of conquest, including forced tribute, enslavement and agricultural laboring systems, and outright slaughter of surviving opposition (Weber, 1994, Wilcox, 2009, Ferris et al. 2014, Resendez, 2016). Spanish missions maintained their forced labor systems through religious justification and promoted conquest as an agent of conversion to Christianity. Forced conscription and slave raids led to "thousands of Native peoples worked to death, died in accidents, or were poisoned while working with the toxic agents of silver smelting" (Weber, 1994, 92). Pueblo communities were discouraged from hunting and forced into excessive farming labor to provide tribute to the Spanish. "Missionaries remarked on the frequency of miscarriages among Indian women due to the hardship. There were multiple epidemics of smallpox and measles throughout the 1700s" as a result of the harsh agricultural tribute system and socially disruptive colonial rule (Stodder, 1990, 13).

Though the circumstances of colonization and missionization differed, the strategies of baptism, population reduction, aggregation of settlements, disruption of local economy and trade, imposed labor, and restricted traditional systems of activity were similarly deployed throughout the Spanish-colonized Southwest. The Pueblo people were also subjected to religious suppression as the expression of traditional belief systems were outlawed in attempts to replace these cosmologies with Christianity. Despite forcible religious assimilation, the racialized status and social categories inscribed on Native communities maintained institutional and hierarchical barriers that prevented them from

acquiring real status. This consistent oppression and mistreatment was further exacerbated extensive droughts and subsequent famines, bans on trading, and subsequent raids on crops, herds, and storehouses by Plains groups.

Pueblo communities were not passive victims to the violence exerted on their communities. Attempts at resilience included mobility through regional abandonment, migration, and aggregation; defense of historical, religious, and cultural knowledge; and enduring the capture of their leaders, entrada warfare, the execution of hundreds, and the burning of their villages.

> To the Pueblos, these years of starvation, disease, and death offered grim testimony to the Christians' inability to intercede with supernatural forces. In search of more efficacious prayers, Pueblos turned to traditional religious leaders and ceremonies. Anxious to halt this Pueblo religious revival and to maintain orthodoxy, Spaniards harshly suppressed native ceremonies and persecuted native priests. In the most notorious case, Spanish officials in 1675 hanged three Pueblo priests (a fourth committed suicide in jail) and lashed forty-three others at the whipping post for crimes of sorcery and sedition. The escalation of Spanish oppression at a time of unusual stress galvanized Pueblo leaders. They worked out a strategy to regain their religious freedom and, perhaps of equal importance, to free themselves from obligations of labor and tribute. Rather than settle for halfway measures that had failed in the past, they planned to rid New Mexico entirely of Spaniards. In 1680 Pueblo leaders united most of their communities against the European intruders. (Weber, 1994, 134)

Instability was amplified by European disease, socioeconomic disruption, misuse of land, warfare, and slavery (Cordell and McBrinn, 2016, Wilcox, 2009). Numerous uprisings occurred over the 1630s and 1640's as Franciscans attempted to abolish Native religious practices. These uprisings included the burning of mission churches. Community reactions to intimidation, violence, stigmatization, subordination, enslavement, and

persecution generated cycles of violence, retaliation, retribution, and rebellion that finally galvanized in the Pueblo Revolt of 1680, a pan-Pueblo rebellion to overthrow Spanish religious and tribute systems. The Pueblo Revolt represented a break in the tribute systems, religious oppression, and forced labor impressed upon the Pueblo community by Spanish missions and colonizers.

The bioarchaeological record reflects the biocultural resilience and constraints experienced by Native communities. Studies of Native skeletal populations from early Spanish mission sites in Texas, California and Georgia document an increased rate of dental pathology, skeletal infection, developmental arrest, degenerative joint disease, nonspecific stress responses, and rates of traumatic injury after continuous interactions with Spanish colonizers (Larsen et al., 1990, Stodder, 1990). Although skeletal remains from "protohistoric" Pueblo peoples cannot pinpoint exactly when there were epidemics of historically European diseases due to their acute nature, higher frequencies of skeletal lesions from infections show significant increase of pathogenic disease. The multidimensional stressors of colonization further created pathological conditions for nutrition, development, labor, and trauma. The appearance of biological responses support the restriction of resources, land, and activity by *encomiendas*. It is this history that therefore cannot be separated from the bioarchaeological record.

Bioarchaeology itself has a stained record in the region (Watson, 2000). The Southwest was a literal training ground and laboratory to some of anthropology's most prominent scholars beginning in the late 1800s. Despite this, sidestepping issues of importance to Native people was a commonality within most research. Scientific data

generated by bioarchaeologists has been slow to consider the value of Native American perspectives, and the conclusions they produce rarely have any benefit to those Indigenous to American Southwest. This malpractice is a continuation of violence on the communities populating the region. Projects in which disassociated skulls were used for the "progress of anthropological study" are the ones that Native Americans most associate with bioarchaeology, and the intensity of estrangement associated with such research has ossified in the memories of these communities due to the harm it has caused (Martin et al., 2013). The Pueblo of Zuni are a distinct group whose experience of mistreatment and the offenses committed against their cosmologies produce specific ethical concerns to prevent further harm.

Traditional Zuni beliefs understand each person's life as passing through four stages. The first stage is life as we know it in the physical world, but little is known of the three other stages (Ferguson et al., 1996, Buikstra and Beck, 2006). It is essential for a person to pass through each of these four stages if the life cycle is to be completed. All human burials culturally affiliated to the Zuni Tribe exist at some point in these later stages of the life cycle journey. To disturb burials on their journey is therefore an act of harm, the ramifications of which cannot be determined but are likely detrimental.

Shortly before NAGPRA became law, the Museum of New Mexico and Zuni tribal council discussed the repatriation of Zuni remains in the museum's collection. The tribal council passed a resolution (Resolution No. M70-90-LO17) that applies to all Ancestral remains and associated grave goods, stating that their removal from graves desecrated the materials to a degree that there was no reversal or antidote. Ancestral Zuni remains in

museums as of 1989 were thus not to be repatriated but instead curated – and in approved circumstances, studied – with respect (Watkins, 2000).

In 2017, Kennett and colleagues (2017) announced the possible discovery of an elite matrilineal group at Pueblo Bonito, visualized through ancient DNA samples extracted from nine sets of human remains excavated over a century ago (Colwell, 2020). This research, conducted in the absence of tribal consultation, occurred because the American Museum of Natural History did not acknowledge cultural affiliation between these remains and living Pueblo tribes (Claw et al., 2017). Numerous repatriations over the three most recent decades have asserted cultural affiliation between Ancestral Pueblo populations and two dozen modern Native nations in the Southwest, so the American Museum's inability to communicate this relationship to either researchers or tribal representatives demonstrates that the power to culturally affiliate human remains still resides with museums, universities, and the federal government, not with the tribes. Furthermore, the choice to conduct respectful research – or research at all – is still often dispossessed from Native nations. The ethical implications of these missteps, occurring for over a century and persisting as recently as five years ago, are also essential to consider when proposing any research within this region or with the Ancestors of these communities.

Purpose of Reoriented Research in the American Southwest

When studying colonial contexts, it is important to not just focus on a processual or evolutionary view of power but to also consider social implications. Illustrating possible relationships between social domination, health, and violence, bioarchaeology provides important information on the progression of social stratification and the oft violent tactics employed to enforce and maintain inequalities. One of the central features of colonial social structures, as demonstrated by the history of the Spanish missions and later American colonialism in the Southwest, is the sanctioned use of violence meant to enforce power. Recognizing these pasts through bioarchaeology reconstructs history with acknowledgement and respect for the violence committed against Indigenous communities while also accounting for the spiritual and emotional concerns of descendants and caring for Ancestors (Mitchell and Brudson-Hadley, 2001).

Bioarchaeological science is a particularly strong research approach to visualize relations, power, and the embodiment of social realities into human biology (Klaus et al., 2017). To accomplish this, bioarchaeology must be holistic, interdisciplinary, and contextual, blending avenues of mortuary archaeology and paleopathology that may also inform these topics. Overviews of research concerning the impact of European colonial expansion necessitate a multidisciplinary but detailed approach to the periods from arrival through modern day. To expand the study of biocultural impacts through a multitude of data sets and perspectives, bioarchaeology cannot focus just on Indigenous population decline, but also resilience, adaptation, and cultural transformations. Understanding the

complexity of interaction and change in the Southwest can provide more detail to the narrative of Indigenous life *despite* colonialism.

Beyond methods, specific theoretical approaches are integral to producing informed bioarchaeological work within colonial contexts, particularly Indigenous theory. Indigenous anthropology integrates even more valuable data and analytical models. At the Pueblo site of Old Cochiti, for example, "complete integration of historical documentary evidence, ethnographic and oral history, and archaeological information was not attempted until the collaborative effort between the Pueblo and archaeologists was established" and Indigenous perspectives became fundamental to research projects (Wilcox, 2009, 220). The long-term, consented curation of human remains gives bioarchaeologists the opportunity and privilege to develop ethically-oriented, careful studies of past lives, reassessing the past beyond the epistemological biases and intellectual shortcomings that have characterized previous work.

It is within these new projects in the Southwest, augmented with Indigenous theories that emphasize ethical and historical concerns, that remains are reconsidered in a sound bioarchaeological framework. These research structures are more adept at seeing individuals and kin or family ties within Native cemeteries, agents in their own communities, and persons attempting to survive in adverse circumstances that contributed to the deaths of many.

Within the contiguous United States, the American Southwest is considered to hold the largest number of Native peoples who continue to occupy their traditional lands and retain their languages, customs, beliefs, and values (Cordell and McBrinn, 2016). Research

concerned with deep historical Native communities should therefore be connected to the historical and modern populations. The focuses of these projects should also translate to contemporary knowledge or concerns held by these groups rather than creating disparate stories. One such research topic may therefore be the long-term effects of destructive power differentials imposed by the Spanish mission system, later replaced by American settler-colonialism. Research with a long view of pre-colonial and colonial periods ("post-colonial" being a term of debate) can encompass the changes and continuities that exist throughout this landscape. Studies of populations before and after European arrival offer a diachronic foundation for critically evaluating change and continuity of Indigenous material culture, social organization, and bodily experiences.

Multi-sited models are also critical in the landscape of North America, as communities had deep historical interactions, and the spread of Euro-American settlers continually forced Native people to reposition themselves across the continent (Hall and Silliman, 2006). This is of similar issue in the Southwest, where communities were migratory in nature before aggregating to and escaping from certain settlements in adaptive strategies against colonization. Analyzing empirical and historical documentation of complex interactions with an eye to colonial violence, a bioarchaeological investigation may be capable of demonstrating the multidimensional change and continuity through these eras and "illuminate the dynamism and malleability of tradition at the same time as they challenge essentializing perspectives" (Harrison and Wilcox, 2014, 491).

Bioarchaeology framed by Indigenous theory can lend support to a record of the past already stewarded by Native knowledge keepers, in particular the experiences of

individual and community expressed within the graves of ancestral populations. Through an Indigenous-life history approach, the cemeteries of the Southwest can continue speaking to the world of not-so-distant pasts, narrating the creation of cemeteries on the basis of individual and group identity and experience; how colonial influence, dispossession, and missionization impacted cemetery practice; ways in which the cultural understanding and respect of burial endured; the persistence of worldviews despite colonial attempts to undermine beliefs and practices; and active resistance and resilience in Native communities.

Collaborative projects can be more powerful formulations of Indigenous-life-history research. Native communities working in bioarchaeological projects use synthesized evidence to reconstruct their cultural heritage, exert control over their cultural patrimony, empower descendants, and fight for legal recognition as sovereign nations. Furthermore, it is often these collaborative relationships that compel non-Indigenous researchers to conduct projects that benefit communities (Zuckerman and Martin, 2016). The Pueblo of Zuni is one tribe that frequently employs archaeologists and biological anthropologists in tribal programs to manage cultural resources and conduct research with Ancestral materials.

> Some anthropological studies are of abiding interest to tribal members since they document Zuni history and traditions. Other studies are viewed as intrusive, publicizing esoteric aspects of Zuni culture that tribal members do not think should be divulged to uninitiated people, and violating the trust with which this information was provided to scholars. Some studies are viewed as both interesting and inappropriate at the same time. (Anyon and Ferguson, 1995, 927)

An epistemological and cosmological divide must be bridged, however, to conduct this work. Anthropologists, without an informed perspective, often view human remains as they do sites or artifacts: things holding information about biocultural experiences, often in a vast array of related but impersonalized data. To the Zuni people, human burials are on a journey: each person passes through four stages during their existence, and the process is only complete when their remains have disintegrated and returned to the earth. The disruption of this journey can have serious consequences for both the deceased and the living, and it is thus sacrilegious to disrupt Zuni ancestors by disinterring their remains. Unfortunately, many such disruptions have already occurred due to non-consented excavations. The fallout has resulted in untenable relationships between researchers and the Zuni people. Another consequence has been increased conservatism at Zuni Pueblo regarding research not sponsored by the Zuni Tribe itself (Anyon and Ferguson, 1995, 1996). It is with this sociopolitical context that any work must be done with the discretion of Zuni representatives.

In any research project involving human remains, open communication with the groups identified as descendants is encouraged. In some cases, out of respect and sensitivity to continued traumas associated to Ancestral displacement, these discussions may be limited or mediated through institutional bodies with pre-determined liaisons. In the case of remains from the Ancestral Southwest, represented in part by Zuni ancestors, many are curated by the National Museum of Natural History with permission of the affiliated tribes. Previous discussions between the Smithsonian Institution, tribal governance, and religious representatives has sanctioned their continued stewardship and accessibility of these

remains to researchers. Consultations with the curatorial staff at the NMNH is required for a researcher-descendant interaction to be facilitated.

Without having these direct interactions, it is still possible to understand the restrictions of potential bioarchaeological work by reviewing previous projects with the Zuni, knowledge of their worldviews, and an understanding of previous research conducted alongside them. “There is an old joke that the typical Zuni household consists of a mother, father, children, and an anthropologist. In fact, the Zunis are one of the most written-about tribes in the world” (Roscoe, 1991, x). This research lineage provides a wealth of previously collected information, but it also predisposes research with Zuni Ancestors to position itself reflexively. Present scientific practices should attempt to align with Zuni knowledge systems while taking care to not further disturb community life.

In this setting of potential research, Indigenous-life-history may resolve some ethical and epistemological issues. The concept of Indigenous-life-history begins with the relational concept of the kin group, whether this be household or extended. Among the Zuni people, as with other discrete communities in the Southwest, the household is often the basic unit of social organization, whereas clans control agricultural land and resources, are responsible for conserving ritual knowledge, and hold stewardship over religious materials (Cordell and McBrinn, 2016). Graves occur within organized cemeteries, within home sites, and at other non-home areas of interaction. “Burials … [can be found] at small house sites, where they are commonly found in middens or under the floors of rooms” (Cordell and McBrinn, 2016, 194). An understanding of these sociocultural patterns within

the Ancestral past helps direct the construction of a project involving these graves and potential kinship relations between those buried there.

Consideration for the perspectives and experiences of descendant groups of the Ancestral Zuni also preserves respect and can lend more foundational data to the context of Ancestral life. When permitted as a line of evidence by knowledge holders, oral tradition or oral history hold both worldviews and historical knowledge that can corroborates bioarchaeology. Researchers are responsible for requesting this permission from tribal representatives so they may determine what oral history and knowledge is appropriate for use in research to maintain respect for, sensitivity to, and privacy of the descendant community (Anyon et al., 2000). In these specific circumstances, Zuni representatives have in the past expressed a concern for the misuse of oral traditions in research and have requested they be kept separate from this type of work due to the liability of exploitation and possible mishandling of Zuni knowledge (Anyon et al., 1997, 2000).

So, too, the fundamental worldviews of a descendant community must be respected. Indigenous and Euro-Western understandings of space and time differ (Smith, 1999). The orientations, positioning, and systems of languages associated to time are especially distinct – whereas Western perspectives understand time as linear, Indigenous knowledge often takes a non-linear, circular or continuous form (Gulliford, 2000). History in contemporary life has been a contentious issue for many Indigenous communities, because it is directed by the historical knowledge and time scales of the colonizer. It is also a narrative that assumes a division between something considered the present or history with what was “prehistoric,” when “modernism” arrives or is initiated. This division between

“historic” and “prehistoric” not only destabilizes non-linear time but also discredits the history held by oral tradition, because “history” is most often defined as when past is written by a community or inscribed by Europeans upon interacting with them, such as the arrival of the Spanish in the Southwest. It is at these transitions that traditional Indigenous knowledge ceased to be “real” within Western concepts of history, forced instead to the categories of mythology or superstition.

“Deeply embedded in these constructs are systems of classification and representation that lend themselves easily to binary oppositions, dualisms, and hierarchical ordering of the two” (Smith, 1999, 55). These differences in worldview change perceptions not just of time but also space, place, and relationships to the land as either a site for resource extraction and ownership or a place of relation, exchange, and memory. For this reason, a project involving Indigenous remains should not divide periods upon “history” and “prehistory” but rather between major sociocultural trends, relations to the environment, ecological change, material usage, identity, or new types of interaction, such as the introduction of Spanish missions to the Ancestral Zuni landscape.

Bioarchaeological research is often carried out under the concept of linear time perspectivism. This temporal structure has the consequence of disembodying descendant populations from their Ancestral communities. An Indigenous-life-history model, however, explores questions of experience, life, stress, and death within relational, kin-based units of biocultural interaction. By applying biodistance analysis, this research format recognizes that remains and burials represent populations that are related to one another in ways more consistent with collective memory.

Different understandings of space and time represent different ways of knowing, and a research project involving Indigenous groups which hold these cosmologies must respect and consider them relevant knowledge. Many of the Zuni people of deep history and present-day experience non-linear time that directs interactions with the land and Ancestors. In this relational ontology, Ancestors are regarded as active, living agents within the community. The ways in which scientists conceive of time, life, and death versus experiences in Zuni communities differs and has previously led to disputes and misrepresentations of Ancestral relations. These differences may still be reconciled, but such integral worldview and experiential distinctions should be acknowledged and explained in research conclusions.

Project Layout

To demonstrate the applicability of the Indigenous-life-history, the following provides a hypothetical layout of the major theories, materials, data sets, analytical models, and topics involved in the exploration of Ancestral Zuni populations. With the obvious contextual changes necessary to be relevant to the relevant populations, this layout may have application to other regions of North America or Indigenous groups living within other landscapes.

Before any original data is collected or analyzed, historical and ethnographic content must be amassed. The site(s) and population(s) of interest should be decided. When possible, multiple sites or sites with a long-term history of habitation should be chosen

based off a considerable sample size (>25 individuals) and quality documentation. The history of the relevant region and culture should be accrued from any available documents and collections verified for use by affiliated Indigenous groups. These may be ethnographies, ethnohistories, or oral histories. If permitted, historical data will also include Indigenous beliefs and mortuary practices relative to biocultural experiences, kin, or burial. Any previous research or excavations that have taken place should also be reviewed to visualize the history of anthropological work in the past. In the case of the Ancestral Zuni, Pueblo Bonito (828-1126), Heshotauthla (850-1275), Puye (900-1580), and Hawikku (1400-1680) represent temporal breadth, high sample size, and decent documentation. These sites also represent both traditional and missionary cemeteries as well as communal and individual burials. This variation provides an opportunity for more interesting discussions about change and continuity over time and space.

From these sites, certain data sets must be collected. To summarize this rather extensive list, the production of data with reference to Ancestral Zuni remains is split into four stages: gathering information about the biological disposition and mortuary context of each individual in the mortuary sample, calculating biodistance from metric and nonmetric traits and burial placement, analyzing this data to decipher potential kin-based plots, and comparing the stress indicators between related individuals. Skeletal and dental remains provide metric and non-metric traits, as selected by the researcher to fulfill their specific research questions about life history. Pathological conditions should be noted, including those reflecting developmental constraints, disease exposure, and immune susceptibility. For example, linear enamel hypoplasia functions as a developmental indicator of stress for

early life, while tuberculosis demonstrates the presence, rates, and severity of disease existing before and after colonization. Trends in the appearance of such pathological conditions between households and over time provide compelling data for assessing family-based experiences of stress. Material culture, burial characteristics, and grave location should be documented and associated to the respected individuals interred for contextual integrity. Using these sets of data, most questions of Indigenous-life-history can be assessed.

Analytical frameworks are lined up in similar fashioned to correlate with the data they will consider most closely. Life history approaches to bioarchaeology and paleopathology will be most valuable in the analysis of Ancestral Zuni remains. Contextualized mortuary archaeology will be invaluable in the consideration of burial context. Biodistance is the necessary statistical tool for assessing biological and mortuary relations between individuals. Feminist and queer anthropology help direct the treatment of this data and the questions asked. Finally, Indigenous anthropology frames the evidence within the necessary context and places emphasis on ethical, respectful research with Ancestral Zuni remains. An Indigenous-life-history model collectively addresses these frameworks for analysis.

With this outline in place, it is possible to develop certain research topics. Before engaging in any area of study, it is best practice to review the structure and research questions of the project with affiliated groups who have not yet given consent to enact it, and this applies as well to Zuni communities (Mitchell and Brudson-Hadley, 2001). Consultation may occur through institutional bodies or tribal representatives but should be

explicit about methods and theories to be employed before engaging in the research itself. This is a feminist-Indigenous practice of consent that should be applied to all science involving humans and their relatives.

Individual Life Histories and Identity

An individual's life experiences and story are taken, in recoverable part and invisible whole, to the grave. As life histories and studies of identity have been augmented by more detail-oriented approaches to life history, an Indigenous-life-history is an ideal way to explore topics of individual biocultural experience within the Ancestral Zuni record. The full biocultural or osteobiographical profile of an individual is essential data for this framework. Characteristics of occupational stress markers and relative health or disease tell components of the lived experience, often demonstrating inequality in systems such as colonialism or social hierarchy. Mortuary disposition may also reveal aspects of belief systems, as the combined symbology of the individual, group, and beliefs constitute the grave. This particularity in burial may be referred to as individualization.

Within studies of individualization in burial, a research project with the Ancestral Zuni may seek things that *do* or *do not* necessarily correlate to other individuals in a population. While similarities provide a visual bond between members of a sample, the appearance of variation demonstrates the uniqueness of each life history and potential differences of identity that relate to experience. Characteristics – whether skeletal or material – that aren't replicated in other graves have the potential to express the

particularity of a person's life history and sociocultural identity. Identity must also be contextualized with the influences of Ancestral Zuni contexts, such as gender roles within this community that do not reflect binary or heteropatriarchal formats.

Postulations about any identity must be grounded by the co-production of biological and cultural life within Ancestral Zuni cosmologies. Biocultural identities may constitute specific and important social roles, may operate with fluidity, or may be neutral in nature. The researcher should not default on their own notions of identities and assumptions made through culturally-biased methods of determining or conflating identities. For example, biological sex should not be directly translated to binary gender assignments within Ancestral Zuni samples, and biological age should not be equated to social age based on Western standards of life cycle stages. Instead, relevant Ancestral Zuni understandings of personhood, gender roles, and notions of age in relation to tribal identities should be integrated into these assessments. The role of co-research with Zuni scholars and knowledge keepers is paramount for understanding these nuances.

Population Experiences and Relations

Expanding the data of individual life histories illuminates community experiences and relations. Paired biodistance calculations and paleopathological correlations can speak to population life history trends. This model inherently seeks characteristics or data that correlate, are patterned or relational, and express the relatedness of a group of people in

biological and sociocultural experiences, i.e., similarities in biomarkers, similarities in burial disposition, or similarities in pathological responses to the environment.

Different groups within a population sample may be visualized by separate correlations. Kin units within the Ancestral Zuni past may therefore demonstrate dissimilar experiences within one population. Skeletal markers of genetic relatedness and common experiences of disease relate the experience of stress to a time and place where individuals lived, and shared experiences connect them through the embodiment of a shared environment. Work with linear enamel hypoplasia, for example, may therefore demonstrate the shared experience of nutritional deficiency. A related group all affected by tuberculosis could help identify a contiguous family unit that unfortunately shared the same infection. These shared stress experiences do not necessarily have to be shared by genetically-related kin but rather those operating in a similar space and later buried in relation. Further, relations that are not necessarily biological may be viewed in material culture through burial pattern and items shared through kin groups.

Multi-component biodistance alongside correlate data thus becomes kinship and community focused. Radiocarbon dating may also be introduced to provide more temporal markers of relation, linking certain graves to an event such as migratory aggregation or Spanish missionization among the Ancestral Zuni. While paleopathological data functions as empirical evidence of stress, the wider array of relations visualized by statistical closeness demonstrates kinship in organic, non-prescribed forms.

Cosmologies and Lived Experience

Graves can represent the reconstruction of beliefs for the person buried and the buriers by incorporating beliefs about death and symbology into the treatment of the deceased. Cosmologies within an Indigenous-life-history approach are best treated as not just a factor in burial but also an influence in lived experiences, such as life-long interactions with the environment or embodied ritual. As such, it is essential to be familiar with the cosmology of a group before attempting to make correlations between these world views and biocultural possibilities in the bioarchaeological record.

While Zuni representatives have asserted that traditional stories are not meant to be incorporated in research projects, shared understandings about time, space, death, and relationships to nature may still be provided by Zuni co-researchers if consent has been given by liaisons. Burial placement, positioning, association, and location are all archives of relation that may speak to cosmology. Further understandings of life and death may be gleaned from the disposition of remains as complete, partial, or ritually manipulated (e.g., cremated). It is once again essential to confirm that the use of Ancestral Zuni cosmology and knowledge is permitted in these types of explorations, and Zuni representatives are should not be left out translators of their Ancestors burials.

Circumstantial Changes, Resilience, and Constraint

Using the analysis derived from individual and population data, research can interpret circumstantial changes over time as they impacted lived experience for the

Ancestral Zuni. Considering these shifts requires contextualized life histories that demonstrate the variation of resilience and constraint at one time and the trends over time. Cemeteries and structure-based burials among the Ancestral Zuni are structured relationally, and the tight timeframes of kinship are valuable units of analysis to see potential change of traditions, bodily resilience, and constraints of survival. Tying mortuary, biodistance, and paleopathological data over extended time (ideally linked to radiocarbon estimates for some sense of temporal relation) can provide insight to the changing experiences of these populations through history.

How, for example, does the organization of burial change over time as life history experiences shift? How are generations differentially recording the bodily struggles of missionization or colonialism, and how do these compare to periods before the arrival of Europeans? What narratives of osteobiography appear, disappear, or transform over time? These analyses require special attention to Ancestral Zuni and other histories that align with such trends, such as knowledge about the introduction of certain diseases to a pueblo or increasing physical demands resulting from tribute systems imposed by Spaniards. This is again an opportunity to involve Zuni knowledge keepers as fellow scholars in research to contextualize and analyze data.

Influence of Colonialism on Stress and Differential Health

Work involving specific effects of colonialism among the Ancestral Zuni follow similar lines of questioning as models that consider change, resilience, and constraint, with

the additive focus on colonial structures and interactions. Within an Indigenous-life-history approach, themes that consider and expose the consequences of colonial systems may be the most essential to treat with sensitivity and regard towards Indigenous perspectives. Histories, both political and bioarchaeological, have most often been dictated by colonial voices, and this holds true in the history of the Ancestral Zuni. Representatives should be in the discussion of these topics before any form of analysis is complete for publication.

An Indigenous-life-history of colonialism in this region elevates the knowledge of Zuni communities and the embodied knowledge of Ancestors to uncover the unobscured lived experience of colonialism. This may take the form of co-researching Zuni historians and knowledge keepers, reanalyzing colonial accounts of interactions with Zuni communities, and illuminating the embodied lives of Zuni Ancestors before and during distinct periods of colonialism.

A multitude of time periods, cultures, and communities have been studied in the North America. Each exemplify behaviors, belief systems, and interactions that vary widely over time and space and thus cannot be categorized even into singular regional cultures even when similar colonial powers were exerted over disparate communities. The influence of colonialism on stress and differential health, then, should be particularized to a community through Indigenous-life-history rather than projected from generalized trends.

Conclusions

Indigenous-life-history incorporates qualitative and quantitative data sources, multidisciplinary methods, and a multitude of informed, informative theoretical perspectives. Using social theory alongside physical evidence allows this model to interpret communities and their interactions, the formation of social identities, and the dynamic and changing realities of life. By considering the agency of the individual and the collective, Indigenous-life-history visualizes their relations within a socioecological structure, playing out over dimensions of time and space. While Indigenous-life-history may be a model for understanding and ethical practice with any research population, it is most relevant and effective when applied to work with Indigenous communities.

As in the cemeteries of contemporary peoples, the identities and experiences of those buried in deep historic Indigenous graves are interred in ways that speak to the questions posed by the Indigenous-life-history framework. This is not an attempt to elevate Ancestral or Indigenous graves through the justification of their similarity to modern Western ones; rather, it is to disturb the idea that these burials are too historical, obscure, or indistinguishable from each other to justify humanizing approaches to research or the respect deserved to all Ancestral remains. Modern human behavior has motivated psychosocial treatment of burial for millennia, and the same relations and individualizing traits we see in present-day graves appeared in varying ways within the past. Examples of this can be easily witnessed through work with the graves within the Ancestral Southwest or specifically Zuni Ancestors.

Familial and kin relationships were often reproduced through association of place, specific types of burial items, and closeness. Religious associations appeared in the treatment, orientation, and symbols of burial. Sex or gender identity may factor into the stylistic details of internment or distinctly gendered materials as they also factored into embodied experience. Age, instead a date on a tombstone, may be instead reconstructed in deep history through the types of goods buried with a person or the location of their grave. The individual's health, stress, and relation to others (biological or social) is invariably embodied in skeletal remains. Signatures of the individual can be represented by unique factors in their treatment that diverges from the rest of the population, whether this be exceptional objects or physical dispositions.

One research goal of Indigenous life-history is to assess the relationships delineated by these factors through multiple methods and analytical frameworks. Culminating projects will likely be involved and deeply historical as well as theoretical. Considerable depth of knowledge is necessary to properly contextualize pasts and populations that have been treated as extractable resources or simplified points of data by the anthropological field, such is the experience of the Zuni for centuries. Indigenous life-history is primed to perform the important work of examining effects of colonial exploitation and policies using myriad lines of related evidence. Individuals and populations are units of analysis in a "root-to-canopy" model of insight into lived experience.

Indigenous life-history is adept at understanding both the privileged and dispossessed. It has the capability to assess expressions of identity, various forms of kin relations, interactions with the environment and cosmology, differential embodied

experiences, and abuses suffered by Indigenous populations in the experience of colonial oppression. The model can also demonstrate the resilience and resistance of Indigenous people, intentional changes for stability, and the impact that colonial interactions had on settler-colonial communities. Aligning all possible themes into one holistic project is a near insurmountable task, but it could be the most valuable, comprehensive vision of the past bioarchaeology may paint.

CHAPTER EIGHT: CONCLUSIONS - NEW LEGACIES

Bioarchaeological research is an indispensable tool in the process of uncovering human narratives, as it can be employed to assess the impacts of colonialism and racism on Indigenous communities which continues to impact these populations today. Indigenous trauma is not historical or anecdotal – it is very literally embodied, written in the biocultural life history of Indigenous communities, even as colonial narratives have sought to suppress these knowledges. For deep historical populations, this experience can be re-embodied in part through bioarchaeological science with informed, decolonial frameworks, including Indigenous-life-history.

Anthropological excavations of graves, disinterment of Ancestors, and disrespect of Indigenous knowledge have all continued to harm descendants and dispossessed them of sovereignty over their pasts, presents, and futures. Bioarchaeologists cannot research Indigenous Ancestors of any origin without aligning their approaches to accommodate this sociohistorical context. To accomplish this, Indigenous-life-history prioritizes the experiences and knowledges of descendant communities without tokenizing or minimizing this contribution. Indigenous-life-history emphasizes relations between the dead and their descendant or affiliated communities, the violence committed against Indigenous people, and the potential for reburial.

Respectful, Informed Bioarchaeology

In cases of American bioarchaeology, Indigenous theory can inform the interpretation of life history with guidance from the historic and sociocultural knowledge provided by Native scholars. These perspectives can also be valuable for non-Native anthropologists who must consider factors of Indigenous experience emphasized by this lens. Any science that involves Ancestors, however, should also consider the social, cultural, and political implications of its work. A long history of oppressive violence against Native, First Nations, and other Indigenous people in North America necessitates caution and sensitivity in studies that include their ancestors. As Rhoades (2002) dictates:

> Those with experience in Indian communities are well aware of instances of often egregious exploitation of Indian individuals, communities, and tribes by investigators. Sometimes these have resulted from overtly unethical behavior, sometimes from simple ignorance… While recognizing that some Indian communities can and do benefit, at the same time research can be used by politicians, media persons, and the lay public to adversely affect American Indian people and communities and their political systems. Perhaps the biggest potential harm from such research, however, is disruption of the community. (Rhoades, 2002, 426)

There are several fundamentals to working with Indigenous remains: informed consent or refusal for research should be attained from the affiliated communities, intentions of research should be clearly communicated, research should benefit the communit(ies) or answer questions they have, methods techniques should be largely preservative, collaboration is beneficial and necessary when it does not perpetuate harms, and research results will be communicated with affiliated groups (Rhoades, 2002, Kovach, 2010, Nicholas, 2010, Atalay, 2020). This process operates on complementarity and

reciprocity between researchers and affiliated communities. Researchers specifically must recognize the intimacy and dependency that exists between the scientist and the population they interact with. Attempts to articulate the past cannot happen without the presence and agreement of those whose stories are being told. Any scientific understanding gleaned from observations intensifies, rather than negates, the intimacies and dependencies that exist in a social world which we aim to narrate. Scientists must continue to respect their "subjects" as equally co-producing their conclusions. This relationship gestures again to the necessity of "ethical" work, maintenance of personhood, and recognition of experience and relation within bioarchaeological work.

Specifically addressing experience and relation helps to augment studies of marginalization and life history, as embodied health outcomes can address interactions and environments encountered throughout life (de la Cova, 2019). Indigenous-life-history has foundations in these considerations, promoting a practice of respect in any bioarchaeology performed with Indigenous groups whose bodies have been subjected to colonial violence. Understanding remains as people who have experienced individual and situated life histories also encourages the respectful treatment of their bones. Researchers practicing Indigenous anthropology are more accepting of non-Western worldviews (i.e., understandings of time, family and relatedness, concepts of life and death) as they impact the remains they work with (Pullar, 1995). They are more likely to integrate these views into their handling of remains and, in doing so, enact a relation of respect and recognition that only recently manifested in bioarchaeological work.

Indigenous anthropology and respectful practices of bioarchaeology also change the interpretation of Indigenous cemeteries. As cemeteries today do not arbitrarily reconstruct our daily hierarchies of power, health, gender, sex, or biological stress (though circumstances of burial may reflect to some extent resource accessibility), neither do deep historic cemeteries. Bioarchaeologists cannot let the efforts of discovering trends, patterns, or inferences about historical culture mask the existence of bioarchaeological remains for what they are – individuals, persons, and Ancestors. Even in a population which prioritizes community values over those of the singular, the collective over the one, there must be recognition that the remains of each person appears to us differently based on their identity, life experience, and relations to other beings. Native, First Nations, and Indigenous communities descended of these people still recognize the individual represented by the bones in Ancestral graves, as they still have influence, agency, and importance in the lives of the living. This, too, must direct bioarchaeological interpretations of the past and present of these individuals who we are privileged to learn from.

Reburying the Ancestors: Repatriation and Embracing the Past

The "unequal treatment of Native Americans as a category [oft led to] the racist assumption that American Indian skeletons should be museum specimens" (Colwell, 2017, 225). Rather than viewing Ancestral remains as persons or relatives of present-day peoples, anthropology viewed Native American skeletons as rare artifacts or objects from which to extract information about typically racialized histories (Lonetree, 2012). "Depersonalized

and desacralized, the body became data," the historian Robert E. Bieder has written. "It was redefined symbolically, politically, and scientifically and was seen more as a specimen for observation than as the temple of the soul" (Mihesuah, 2000, 20). Japanese-American Senator Daniel Inouye of Hawaii, who contributed to repatriation legislation in the United States, stated "that when Indian burial grounds are desecrated, it is anthropology, but if burial grounds of non-Indians are desecrated, it is called grave robbery." (McKeown, 2012, 38).

Indigenous voices have declared much the same (Mihesuah, 2000, Brave Heart, 2011). The protection afforded to Euro-American and other colonial-era cemeteries in the United States has not been extended to those of Indigenous- or Native-identifying peoples. The American nation and culture which inscribes "rest in peace" on the headstones of lost loved ones does not afford the same repose to Native graves on the same lands, despite the great significance they carry for their descendants. Remains can embody Ancestors, but they are also the biological evidence of the dispossession and scientific objectification of Indigenous bodies (Kakaliouras, 2008, 2012). Institutions that have historically claimed possession over unjustly disinterred Ancestral remains are liable to understand this history, recognize the continuity of relations, and engage in acts of restitution (Lonetree, 2012).

Discourses around repatriation in anthropology have shifted toward collaboration, dialogue, and reconciliation between institutions and Indigenous communities (Kakaliouras, 2008, 2012). Rather than limiting anthropological practices, however, repatriation and collaborative relationships in part illuminate the connections of contemporary Indigenous peoples to Ancestral populations and enrich the field with new

questions about how bioarchaeological populations are studied. Bioarchaeologists can aid in deconstructing the mythology of conquest and colonization, helping shift the profession towards more balanced dialogues *with* Indigenous communities as we engage with Ancestors (Wilcox, 2009, Mihesuah 2010, Hardie 2019).

At the Pueblo of Zuni, for example, representatives of the tribe have had active involvement in repatriation from 1977 onwards, and their engagement has not resulted in monolithic requests for the repatriation of cultural materials or remains (Ferguson, 1996). Zuni people uphold a practice of four attempts at reconciliation with an adversary before stronger actions are taken, and only the resistance of institutions has led to legal action. In the early 1990s, "Tribal Resolution No. M70-90-L017, which applies to ancestral Zuni remains curated in all museums… states that the remains of Zuni Ancestors and their associated grave goods that have been excavated and are being curated in museums and other institutions have been desecrated by removal from their ancestral homeland and that there are no adequate measures to reverse or mitigate this desecration" (Ferguson, 1995, 267). Tribal Resolution No. M70-90-L017 also states that any future excavated graves are to be reburied with all grave goods intact. Later resolutions followed with explanations of traditional burial beliefs, the geographic and temporal range of affiliated graves, and the acceptable actions of any future excavation and reburial, if such acts were unavoidable due to disturbance of graves. In the case of previously excavated and curated remains, these Ancestors were not repatriated. Instead, museums were trusted to respectfully steward the remains, and the Pueblo of Zuni requested any scientific studies involving their ancestors be sent to the Zuni Tribe.

As per professional archaeological programs directed by the Pueblo of Zuni, specialized policies have been developed for the treatment of human remains (Ferguson 1995, 1996). These policies entail graves only be excavated if burial locations are threatened and reburial occurs as soon and as nearby as possible. Furthermore, only non-destructive osteological analysis and respectful studies of grave items are permitted before reburial to prevent further harm on Ancestors or living communities. Research programs have continued within these new systems under the directives of Zuni representatives, and this dynamic has preserved not just the sanctity of Ancestral burials but the sovereignty of Zuni peoples.

Even within a single tribe, let alone multiple distinct populations, there is no adequate way to monolithically deal with the diverse issues pertaining to the repatriation of human remains. "For their part, the Zunis often expressed their feelings of these exchanges as *tsemeti*. Sadness. Sorrow is for them the feeling that accompanies the repatriation process" (Colwell, 2017, 51). The traumas of unjust excavations and unconsented studies are carried within this process, a long-term grief that must be handled sensitively by non-Indigenous anthropologists. There is significant disruption still occurring within acts of repatriation. "We are so ritual oriented," Tessie Naranjo, of the Santa Clara Pueblo, New Mexico, stated. "There is no ritual for reburial, so we're kind of stuck. We can't just dream up a ritual" (Colwell, 2017, 94). The past actions of the anthropological institution continue to disturb the sociocultural relations of Indigenous communities in the Southwest, Americas, and beyond.

There is seemingly no end to the consequences of depriving Indigenous populations of their Ancestors. In another horrific crime committed by colonial institutions in both the United States and Canada, thousands of Indigenous children were forcibly channeled through residential school systems of cultural and racial genocide, culminating in hundreds of unmarked graves (Fortunate Eagle, 2010, Fontaine, 2010, Sellars, 2013, Churchill, 2004, Wallace Adams, 2020). These graves and the children interred in them were not treated with the same care as those buried in Euro-American graves. Their burial by colonial authorities showed no regard for the individual or their relationships, and the rediscovery of their careless interment only adds evidence to an extensive period of trauma experienced by Indigenous populations throughout the Americas. The visibility of abuse and community pain associated with the mishandling of these children parallels the shared grief and harm caused by the mishandling of Ancestors by researchers, universities, and museums. Necessary healing can only be achieved through recognition, respect, and repatriation.

Akin to their distant Ancestors, the return of these children for proper burial within tribal hands and homelands has become a significant project of agents from within the larger institution of bioarcheology. Unlike many of the same Ancestors, these children have been carefully disinterred from the earth to offer a truer sense of rest. Their proper reinterment with the guidance of tribal representatives and community participation has been one act of healing for descendants of affiliated communities. Though their burial was before void of cultural identities and respect, reburial has given these children places of rest in which it is hoped they may finally find peace.

It is the same sentiment towards violent disruption that should motivate anthropologists to take part in the process of repatriation. Ancestors should be returned to their communities and to the earth through which they can relate back to the world they live(d) within. Repatriation accomplishes many of the goals of ethical or decolonial engagement in anthropology, reburying the Ancestors in recognition of a human history the discipline so vehemently pursues through research practice (Mihesuah, 2000, Hardie, 2019). Having exposed the violent past of settler-colonial systems through both theory and historical evidence, bioarchaeologists are now called upon for decolonial (re)action within their own institutions through the efforts of repatriation.

Anthropologists who enact repatriation through their practice acknowledge rather than excuse the history of colonialism, its continued impact on Indigenous communities, and the responsibility of anthropologists to recognize and engage in healing processes for wounds they contributed to. While some reconciliation has been enacted through research practices by bioarchaeologists, it is through informed decolonial approaches such as Indigenous-life-history that repatriation becomes a more involved, connected part of the science. At the conclusion of any research project involving Indigenous remains, the opportunity for repatriation should always be available to descendants, as the return of Ancestors represents a stage of research as well as healing. Indigenous-life-history thus presents a model that is ultimately a stage of collaboration, co-conspiring, activism, and repatriation rather than an instrument for extractive data production and research publications.

Conclusions

As a research science, bioarchaeology is propelled by the interrelated variation of human remains and material culture, as these lines of evidence narrate the lived experiences of individuals and populations as well as their agency in those lives. An interest in varied, interrelated, and agential experiences correlates with the research focuses of Indigenous anthropology. The priorities of tribal governments and anthropological programs, however, rarely align unless there is intentional collaborative interaction. Even though Indigenous perspectives have been applied to bioarchaeology, theory has somewhat outpaced available methods, and Western scientific perspectives have taken precedence over Indigenous ways of knowing.

Scholars cannot passively assume the language of decolonizing their institutions and research. If someone claims they perform decolonial work, the first question to ask is how their labor restores Indigenous life and land. If it does not, it is not decolonial. It may be bioethical or social justice, but within the operating definition of Indigenous Studies, it does not support decolonial efforts. To fully accomplish the research goals of a decolonized bioarchaeology, researchers must abandon missions of neutrality and invert "Science" as it has acted as a domineering knowledge-producing process. The discipline must be critically unmasked, its structure destabilized, and open itself to co-conspiring with Indigenous peoples. Procedures should be developed to focus on Indigenous-informed, agency-centered approaches that recognize the diverse and pluralistic ways in which individuals operate within and influence a larger system of relation. Indigenous-life-history may be adept at addressing these matrixes and specifically the history of interactions within

colonial systems. Preventing the alienation of a people from their embodied experience, culture, or Ancestors can be achieved through Indigenous-life-history.

Decolonial practice promotes the restitution necessary for anthropology to enact in the healing of past harms perpetrated on Indigenous communities. Such restoration of Indigenous life and land is in part accomplished through the dissemblance of anthropology's power structure and disciplinary history that, from its inception, has assisted in the dispossession of Indigenous life and land. Decolonial bioarchaeology intends to hollow out the klepto-manic caverns of anthropology's "collections" – the stolen Ancestors and histories – from which the field has built its settler-colonial authority. This was the foundation on which taxonomies of race were constructed, from which branched legislation allowing for Indigenous genocide and structural violence. The framework through which settlers have "made sense" of Indigenous peoples is thus rendered inoperable. Deprived of the bones of the stolen, "the mythology of a nation built on 'discovery,' 'democracy,' and 'manifest destiny' begins to fall apart, and the old foundation, bereft of bones, cannot hold it up," and this function of anthropology collapses (Miranda, 2002, 146). This goal is not utopic or salvation thinking, but rather reorienting the research trajectory so that the definition of "science" (bioarchaeology) becomes something more-than-science (more-than-bioarchaeology), indistinct and unelevated from other knowledge systems.

Repatriation therefore reinstates power and respect to Indigenous communities by returning the remains of Ancestors who carry the past, present, and future of their people. Namely, the process of repatriation in the United States can become an opportunity for

Indigenous-life-history bioarchaeology to participate in the restitution of Indigenous life and history. As a happy coincidence, the aptly named Indigenous-life-history model thus presents a timely, comprehensive, and decolonial trajectory of research within bioarchaeological practice of research and repatriation.

Indigenous communities steward their history through their care for Ancestors. As one function of this stewardship, they should be the sole agents for dictating the trajectories of research involving these relatives. In consented studies, bioarchaeologists are responsible for following community guidelines for treating Ancestral remains with care and consideration. Bioarchaeologists are also responsible for upholding preservation and protection of Ancestral remains within and outside of institutional walls. This preservation helps to ensure the descendant community health, sovereignty, and history. After any research project, repatriation can further contribute to these assurances, and reburial represents a catharsis in the healing process.

As stated by Michael Blakey in a recent address to the American Association of Biological Anthropology, anthropology itself is not changing the power dynamics of the world – "the world is turning the discipline." Decolonizing the field is a process, not a step. The previously dehumanizing commerce of biological anthropology, alongside structural and apathetic violences, has co-produced colonial oppression, and it is the researchers' duty to reconstruct bioarchaeology to reverse its contributions. Ethical conduct and radical theory should direct the methods employed. By taking a reprieve from continuous research output, the discipline can develop innovative models, methods, engagements, communication and collaborative activity that does not perpetuate older frameworks.

Synthesizing activist motivations, intersectional FQI theories, integrated bioarchaeological models, and engaging with descendant communities are premises to this work and to the Indigenous-life-history model proposed in this project. If it is performed to the expectations that the author aspires, bioarchaeologists will not just be stewards for the Ancestors, seeking knowledge to hear their stories – we will be granted the privilege to work alongside descendants who tell these stories themselves.

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