Introduction

The looting of antiquities from archaeological sites on public lands has been a problem for as long as there have been public lands managed by governments for the public good. In the USA, there is a significant, well-documented and ongoing problem with archaeological sites on public lands being damaged or destroyed through the pursuit of obtaining archaeological objects. In New Zealand, the quantity and diversity of artifact assemblages is not as great as in the USA. This is because the period of human presence is much shorter, and the country is much smaller and thereby the volume and diversity of 'collectable' archaeological remains is smaller. However, while not documented as thoroughly, there is still an equally strong appeal and scope for collecting both pre and post-European archaeological artifacts as is in the USA.

While vandalism and unscientific removal of archaeological materials is as old as humanity itself, the fascination with and recognition of financial antiquity value, did not really develop in western societies until the industrial revolution in the eighteenth and nineteenth centuries. Artifact hunting was common throughout the USA during much of the nineteenth century (Hutt, et al 1992:19), however concern over the collection and removal of archaeological antiquities from public lands began to emerge in the 1880's with the discovery and subsequent looting of numerous Native American sites, including the Cliff Palace at Mesa Verde in Colorado (Lynott 2003:18).

Despite public and academic concern, the looting of public lands continued unabated for another 25 years until the creation of the Antiquities Act of 1906. This was the first Act in the USA to acknowledge the value of archaeological sites on public lands, and it was also the first attempt by the USA congress to protect archaeological sites. The Antiquities Act served as the sole specific legal protection of archaeological resources until the Archaeological Resource Protection Act (ARPA) was enacted in 1979. This act provided clearer definitions and a more comprehensive approach to archaeological resource protection than the Antiquities Act, and is the primary tool used today to protect archaeological sites. ARPA is administered by four federal land management agencies (Departments of Defense, Interior, Agriculture & Tennessee Valley Authority) and each agency has produced supplemental regulations to permit the enforcement of the Act.

In New Zealand, the collection and removal of antiquities from public lands is happening, but is less well documented than in the United States. Significant collections of artifacts were amassed by both private and public collectors in the second half of the 19th and early stages of the 20th century, with many items and collections now domiciled overseas. Illegal collecting on public lands has continued into the present. During the past decade, the author was a Park Ranger with the Wellington Regional Council and managed a cultural-historical park. In this park, he regularly encountered individuals with metal detectors who were collecting battlefield memorabilia from a historic New Zealand land war site. Removal of both Maori
and post-contact antiquities from New Zealand's National Parks and conservation estate is also happening, but to what extent is not clearly known (Heffernan, pers comm).

During the 20th century, different pieces of legislation were passed to address the loss of cultural materials from New Zealand, with varying degree of attention to archaeological sites. Over time, these various acts were modified, amended and eventually replaced with two acts, the Antiquities Act (1975) and the Historic Places Trust Act (1993), that today, serve as the primarily legislative protection of New Zealand's archaeological antiquities.

The Antiquities Act is administered by the Ministry for Culture & Heritage and regulates the ownership, legal possession and sale of Maori artifacts. Individuals must register with the Ministry to possess Maori artifacts, and are only legally permitted to trade these artifacts to other registered collectors through a registered dealer. An individual can hold ownership of artifacts recovered before 31 March 1976, however artifacts recovered after 1 April 1976 are the sole property of the Crown. Interestingly, the definition of an artifact within the Act excludes from protection all non-Maori archaeological materials. Specifically, the Act defines an artifact as:

"……... any chattel, carving, object, or thing which relates to the history, art, culture, traditions, or economy of the Maori or other pre-European inhabitants of New Zealand and which was or appears to have been manufactured or modified in New Zealand by any such inhabitant, or brought to New Zealand by an ancestor of any such inhabitant, or used by any such inhabitant, prior to 1902"

(Antiquities Act 1975: 2. Interpretation)

At present, there is an effort by the Ministry for Culture & Heritage to change this definition to include pre 1902 non-Maori artifacts as well (Cain, pers comm).

The primary legislation for protecting archaeological resources in New Zealand is the Historic Places Trust Act (1993). Dissimilar to the Antiquities Act, this Act applies to all sites and artifacts contained therein that existed prior to 1900. The Act is administered by the Historic Places Trust, and provides both a broad definition and protection of all archaeological sites on both public and private land.

On Department of Conservation lands, the Historic Places Trust Act is cited in the Conservation Act of 1987 as the enabling legislation in which the Department is mandated to "manage for conservation purposes" the "historic resources" found on the conservation estate [See Part II section 6(a) of the Conservation Act (1987)]. In addition to the Act, the Department has an internal management policy to consider for cultural and historical value, any archaeological site that is over 30 years old.

On non-crown public lands, local authorities are permitted to create protective bylaws under the Bylaws Act of 1910. On territorial authority lands, archaeological resources can be afforded general bylaws protection under Part 8, Subpart 1, section 145, of the Local
Government Act (2002). In section 149 of the same act, regional councils are empowered to a higher level of protection, and are given the latitude to create bylaws designed for, "managing, regulating against, or protecting from, damage, misuse, or loss, or for preventing the use of, - (b) sites or places on land of the regional council that have cultural, historical, recreational, scientific, or other community or amenity values." (Local Government Act 2002, Part 8 Subpart 1 Section 149).

Summary of the Problem

As noted above, the initial movement to protect archaeological resources in the USA stemmed from the looting of the well-known American Indian sites at Mesa Verde. Despite the improvement in laws protecting sites, the looting has continued largely unabated. By way of example, there were 1,720 documented violations of laws protecting archaeological resources on federal and Indian Tribal lands between the years of 1985 and 1987 (Hutt, etal 1992:13). The problem is not limited to high profile, ancient sites, but spans the entirety of American History - from the collection of 12,000-year-old Paleo Indian spearpoints and 500-year-old woven baskets, to 225-year-old American Revolution musket balls and 135-year-old Civil War belt buckles. While it is known what is being looted, and in a general sense, where the looting is occurring, little is actually known as to the type of persons who is doing the actual looting and what their fundamental motivations are.

In New Zealand, artifacts known to be collected range from Maori bone and stone tools, Maori ceremonial objects, New Zealand Land War artifacts (musket and cannon balls, guns, knives etc.), gold rush era artifacts (ceramics, bottles, personal objects) and artifacts left behind by early European settlers. As in the USA, the looting of archaeological resources on public lands in New Zealand is happening (Heffernan, pers comm., Author - personal experience). What appears to be different from the USA is that in New Zealand there does not seem to be significant documentation on the extent and severity of the problem. The impact on public lands of looting for personal or commercial purposes is largely unknown. The extent of illegal national or international trading by New Zealand or international collectors in New Zealand antiquities is unknown. Even less is known regarding the 'who, what, why' and the motivating factors behind the crime of looting of archaeological resources.

Criminal Profiling, Investigative Psychology & the analysis of Crime Scene Behavior - The key to the development of an advanced archaeological resource protection strategy

Criminal behavioral profiling has been used successfully by a number of law enforcement agencies around the world to identify and apprehend certain types of criminals (Petherick 2003:3). The broad area of criminal profiling has over the past 20 years been brought to the general public's attention by the United State's Federal Bureau of Investigation's (FBI) Behavioral Sciences Unit. While certainly not the only agency to develop a profiling
methodology, the FBI's work on high-profile cases has made it the Agency most synonymous with criminal profiling methodologies used around the world.

Anyone who has had the opportunity to critically read an FBI profile will in some cases find the profile contradictory. This may in part be due to a fact that surprises many - the FBI's profiling approach is not statistically based, but rather FBI profiles are derived through brainstorming based on work experience, hunches and gut feelings. While much of the work experience brought into the development of a profile would be analytical within the mind of the individual agent, in that cases that the agent has worked would lead him or her to some specific conclusions, the FBI has not collected this data in a measurable form in which it could be subjected to the rigors of scientific analysis. (As a side note, there is at present an intense debate going on between profiling 'professionals' who advocate one profiling methodology or another in their approach to constructing criminal profiles. For the purpose of this discussion, I am not going to get into that subject beyond saying that there is an abundant amount of rancor and controversy between some fairly substantial egos in this relatively new and rapidly developing field. Also, the 'science' of profiling has up until now tended to be focused on emotive, violent and extremely rare (relative to the population) serial murder and rape cases.)

For the purpose of my research, the most appropriate methodology is based on Investigative Psychology. Investigative Psychology, simply put, is a methodology that is based on statistical analysis of a large number of solved crimes in order to develop a model of criminal characteristics and crime scene behavior. This in turn facilitates a comparison of these results to cases that are still unsolved. While this inductive methodology has obvious limitations, it has the potential to be matched up with a standardized approach to behavioral crime scene analysis that in turn could be extremely effective beyond archaeological crime.

**Specific Research Proposal - Part 1: The LOOT database**

(This is a very shortened version of what I am doing, and is fairly specific to the Law Enforcement side of things)

Fortunately for me, the NPS has been collecting data on adjudicated ARPA cases since the mid 1980's. At present, this database contains approximately 500 cases, which is a large enough sample to be relatively robust statistically. Using a modified Investigative Psychology model for a theoretical basis, I would research and undertake the following:

1) Review and contrast the laws and history of looting archaeological sites on public lands in the USA and New Zealand;

2) Collect the available archaeological resource crime data from successfully adjudicated cases in the USA, and then analyze the data for behavioral characteristics as a whole, and as it relates to the specific type of crime (historic, civil war, prehistoric American Indian, etc.) [see appendix #2 for a draft set of profiling inputs]
3) Utilizing the database of artifact collectors and dealers maintained by the New Zealand Ministry for Culture & Heritage, conduct a confidential behavioral survey of the motivations, scope of collections and habits of New Zealand artifact collectors and dealers;

4) Utilizing a database from one of the many artifact collector organizations in the United States, conduct a confidential behavioral survey of the motivations, scope of collections and habits of American artifact collectors and dealers;

5) Collect the available archaeological resource crime reports and statistics from the Department of Conservation, the Historic Places Trust and Regional Councils; and then analyze the data and determine the specific type of archaeological crime (historic, New Zealand land war, Maori, etc.);

6) Interview convicted archaeological resource criminals to test and or further develop a criminal profile.

At the conclusion of this work, I believe that there are a number of aspects of this research that will prove to be very useful both in New Zealand and the USA.

1) In producing a behavioral methodology, the underling 'how, when's and why's' of this crime may be better understood. This would provide land managers with a much clearer understanding of the motivations and methods used in carrying out the crime, and would be in a much better position to prioritize scarce protection resources to maximize their effectiveness.

2) The research may identify some 'methodological footprints' relating to the types of individuals who commit an archaeological crime. If there is variation in methodology that is related to the type of criminal, then a behavioral typology could be developed, and field officers who encounter an archaeological site that has been looted could possibly make some preliminary assessments as to what type of individual(s) committed the crime.

3) There may be cross over benefits in natural resource crime. By developing a set of logical, rational and quantifiable methods to investigate archaeological crime, a similar methodology may in the future be able to be developed for certain types of natural resource crimes.

4) The collection and analysis of data sets from two separate countries potentially offers a better understanding of socio-cultural effects in resource crime. These two data sets would be useful in analyzing different / similar habits that may exist in two different countries that while different, share many similar cultural characteristics.
Conclusion

This is an exciting and personally very rewarding endeavor that I have only recently embarked on. I have been thinking about this for years, and now I feel that I have thought enough about it to actually carry out some effective research. It certainly is not an approach that is without criticisms, nor what I have presented here is above a very critical look. Having said that, allow me a certain amount of benefit of doubt simply due to the fact that what you are looking at is a very general summation, and this summation does not include many important parts that I will be addressing (such as a geographical profiling aspect, a psychological look at the behavior of collecting, as well as covering matters of confidentiality). Having said all of that, I would LOVE to hear your thoughts, good, bad and ugly, regarding this outline.
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APPENDIX #1

David Canter and Investigative Psychology (Taken From Petherick 2003)

The methods employed by David Canter are similar to those employed by the FBI in that they are both largely statistical in nature. The main difference is that Canter is continually updating his database of offender populations on which to base his theories. By statistical, I mean that known offender populations are studied, broad offender groups (known as typologies) are defined, and the crimes of an unknown offender compared to this group. This subsequently produces a list of characteristics likely to be possessed by the unknown offender by virtue of their similarity to the comparison (or known) offender group.

The origins of Investigative Psychology can be traced back to 1985, when David Canter was called to Scotland Yard to discuss the possibility of integrating investigation techniques with psychological concepts. Canter was unsure whether this could be accomplished, but decided to apply some of the methods of environmental psychology to criminal investigation, most notably the Railway Rapist (John Duffy).

Canter developed a University program revolving around the methods he had adapted to criminal investigation and started teaching his approach to profiling while at the University of Surrey. He later moved to the University of Liverpool where he offers an Investigative Psychology program to students from around the world. Canter's research focuses primarily on which of the established psychological principles can be adapted to, or used for, the development of profiles in the investigation of crime.

The application of Canter's work is based on five aspects of the interaction between the victim and the offender, known as the five-factor model. This model includes interpersonal coherence, significance of time and place, criminal characteristics, criminal career, and forensic awareness.

Interpersonal Coherence: Refers to whether a variation in criminal activity will relate to variations in the way in which the offender deals with other people in non-criminal situations. It is assumed that offenders will deal with their victims in similar ways that they deal with people in their day-to-day lives. It is further assumed that victims may represent significant people in the life of the offender outside of the criminal event, and Canter cites anecdotal evidence in support of this. One such example would be Ted Bundy, whose victim selection was believed to represent his ex-girlfriend.

The Significance of Time and Place: May provide the analyst with information about offender mobility, and therefore guide inferences about likely residential location. As the time and place of the event is largely chosen by the offender, this is seen to be important as it may represent the way in which the offender views their surroundings, and may also be heavily influenced by how they view their own schedule. The time of an attack, for instance, may provide insight into their work or play schedule, and thus give clues about their personal life.

Criminal Characteristics: Used to allow researchers to develop subsystems for the classification of offender groups, which may be used to provide characteristics to investigators that are likely to be possessed by the perpetrator in the current crime. The FBI's classification of the offender as 'organised' or 'disorganised' is one such system used in identifying criminal characteristics, though Canter himself sees that this system is of little use considering there is so much overlap between the two classifications.
Criminal Career: Simply refers to an assessment that is made to determine whether the offender may have engaged in criminal activity in the past, and what kind of activity this is most likely to have been. It is closely related to the last concept, forensic awareness.

Forensic Awareness: Is any evidence that an offender has knowledge of, or may be privy to, police techniques and procedures relating to evidence collection. It may include, but is not limited to, the wearing of gloves, the use of a condom, or the removal of any items contaminated with the offender's bodily fluids.

An assessment of the criminal career may indicate the offender's skill in getting him onto the premises, which might be suggestive of previous offences in burglary, while the way in which he bathes the victim after the sexual assault might indicate this is not his first sexual assault. This information may be given to police, who take the information and compare it to known offenders, the suspects already generated, or by reducing the known suspect pool by excluding those with no prior offences in either of the two areas above.

Canter has also developed a model of offender behaviour known as the circle theory, which developed directly from environmental psychology. Two models of offender behaviour known as the "marauder" and "commuter" hypothesis were developed from the circle theory. The marauder model assumes that an offender will "strike out" from their home base in the commission of their crimes, whereas the commuter model assumes that an offender will travel a distance from their home base before engaging in criminal activity.
## Appendix #2 Draft set of profiling inputs

<table>
<thead>
<tr>
<th>Type of Resource Collected</th>
<th>Indigenous</th>
<th>European</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence</td>
<td>Local</td>
<td>Non-local</td>
</tr>
<tr>
<td>Looting Habit</td>
<td>Alone</td>
<td>With Partner(s)</td>
</tr>
<tr>
<td>Prior Criminal Record</td>
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<td>No</td>
</tr>
<tr>
<td>Level of Site Damage</td>
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<td>Light</td>
</tr>
<tr>
<td>Knowledge of Arch Methods</td>
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</tr>
<tr>
<td>Completed High School Education</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Reason for collecting</td>
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</tr>
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<td>No</td>
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<td>Sex</td>
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</tr>
<tr>
<td>Race - Hispanic</td>
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</tr>
<tr>
<td>Race - African American</td>
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</tr>
<tr>
<td>Walk to looted site (&lt; 1.0 km)</td>
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<td>No</td>
</tr>
<tr>
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</tr>
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