INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI[®]

THE MEDIATING DISCOURSES OF THE EXPERT WITNESS:

Science, Fingerprinting, and the Law

By

Soren David Frederiksen, B.Sc., LLB.

A thesis submitted in partial fulfillment
of the requirements for the degree of

Masters of Arts
Carleton University
Ottawa, Ontario
10 August, 2000

© copyright

2000, Soren David Frederiksen

National Library
of Canada

Acquisitions and
Bibliographic Services

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale
du Canada

Acquisitions et
services bibliographiques

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-57658-2

Canada

**Thesis Acceptance Form
M.A. Candidate**

**The undersigned recommend to the Faculty of Graduate Studies
and Research acceptance of the thesis**

**The Mediating Discourses of the Expert Witness:
Science, Fingerprinting, and the Law**

Submitted by

Soren David Frederiksen, B. Sc., LLB.

**in partial fulfilment of the requirements for
the degree of Master of Arts**

Thesis Supervisor

Chair, Department of Law

**Carleton University
September 2000**

Abstract

Why are scientific truths accepted by the courts while they are reluctant to receive other forms of truth provided by people who can legitimately claim to be experts within particular areas of endeavor? This thesis explores this question in the context of the interaction between scientific and legal discourses in historical context, using Foucauldian archaeology as its underlying theoretical approach.

Science and the law of evidence appear to share certain conceptions, notably conceptions of causality and probability, which can be traced to a shared genesis in the seventeenth century with the development of probability theory. This may explain, in part, why scientific truth claims are acceptable to the courts. Technical means of proof developed in the eighteenth and nineteenth centuries, and fingerprinting was originally brought to Canada from England at the end of this period as a replacement for existing techniques of identification such as Bertillonage. Its subsequent reception by the courts appears related both to its potential as an investigative technique with police discourses and to the discursive practices of the fingerprint examiners who developed methodologies particularly suited to courtroom presentation. By turning to the contemporary example of native land claims in *Delgamuukw*, we can see how the discourses developed by scientific experts in the current day act to mediate between the requirements of the Canadian courtroom and scientific practice.

Acknowledgments

I gratefully acknowledge the guidance of Professor Barry Wright, under whose supervision this thesis was written. Without his constructive criticism and guidance this thesis would not have been completed. I would like to acknowledge Professor Diana Majury for her insightful and helpful critical commentary on the draft of this thesis. I would also like to thank Professor Bruce Curtis for his insightful questions at my thesis defense. Finally, I would like to thank my family: Erica, Andrew, Janet, and Carl, without whose support none of this work could have been completed.

Table of Contents

Chapter I: Introduction.....	1
<i>Theoretical Framework</i>	4
<i>Alternate Perspectives</i>	19
<i>Organization and Methodological Approach</i>	33
Chapter II: Probability Theory and the Birth of the Law of Evidence.....	36
<i>Mediaeval Notions of Probability</i>	38
<i>The Birth of Probability</i>	46
<i>Evidence, Probability, and the Law</i>	48
<i>The Development of the Burden of Proof</i>	56
<i>Conclusions and Overview of Nineteenth Century Developments</i>	63
<i>Further Development of the Law of Evidence</i>	65
Chapter III: The Law's Reception of Fingerprinting.....	71
<i>Police History – Placing Fingerprinting in Context</i>	74
<i>The History of Fingerprinting in Canada – An Overview</i>	78
<i>Fingerprints as a Form of Record Keeping</i>	82
<i>Salesmanship and the Mediating Discourse of Fingerprint Examiners</i>	101
<i>Conclusion</i>	105
Chapter IV: Delgamuukw and Oral History Evidence	109
<i>Expert Evidence in Canada</i>	113
<i>Delgamuukw</i>	124
<i>Conclusions</i>	143
Chapter V: Conclusions.....	148
Bibliography.....	161

Chapter I: Introduction

News reports abound with discussion of the use of science in the courts. DNA evidence seems to be the hottest area of criminal investigation as numerous 'cold cases' are solved through the use of DNA 'fingerprinting' techniques. Outside the realm of criminal law the use of scientific evidence in the areas of medical malpractice, for example, appears to be increasing or at least gaining in visibility. Science seems to have become very much a part of the contemporary courtroom.

This leads one to ask how and why science has become so important to the modern courts. The scientist, be he or she a molecular biologist, medical doctor, or fingerprint examiner, is an imposing figure in the courtroom. The scientist speaks with the voice of truth; a truth reached through days and years of painstaking research by the individual scientist and all who came before. This is a sort of truth that Canadian society seems to value very highly, one in which the legal system also seems to place great faith.

Yet science is not the only area of human endeavor that seeks and claims to provide true answers to questions. Religion, for example, is quite clear in its claim to deal with truth, and not just the small-t truth of the scientist comparing DNA samples in the courtroom but also the larger-T Truths about the universe that surrounds us. Art and literature also deal with truths, as do oral histories and the revelations of psychics. Why are scientific truths accepted

by the courts while these other forms of truth provided by people who can legitimately claim to be experts within their particular areas of endeavor are not received by the courts? To restate the question, why is the evidence of a scientist acceptable to the courts and not that of a psychic?¹ This thesis will explore this question in the context of the historical development of the law of evidence, specifically by examining the early history of the development of the English law of evidence in the eighteenth century. It will then turn to what may be the archetype of twentieth century scientific evidence: fingerprints. Finally, it will problematize this privileging of scientific expert evidence in the context of non-western forms of evidence, specifically in the context of native oral history evidence in Canada.

This involves examining the place of scientific evidence in the context of the Anglo-Canadian adversarial process. There are several aspects characteristic to that process that should be mentioned. The first is its formal separation between fact and law, with the jury determining the facts and the judge the law in a jury trial. This separation is never as absolute as the formal rules might suggest, and in any event the finding of fact is governed by legal

¹ A search of the Quicklaw database (all Canadian decisions) revealed no attempt to introduce the evidence of psychics into the courtroom. The closest comes from O'Sullivan JA's judgement in *R. v. Sepbonow*, [1985] M.J. No. 10: "Later in the day, the judge received a note which read, 'Your Lordship, with all respect, we have a juror who speaks of psychic powers and special gifts. We have tried with all diligence, sincerity and reason to reach a unanimous decision in this case. We are unable to do so because we feel this juror is mentally unable to deal with argument or discussion over the evidence as it is before us, or to communicate the juror's thoughts clearly to us. We cannot deal with this.'" One must imagine the trial judge's face.

rules that determine what sort of information may be presented to the trier of fact. These rules, the law of evidence, are the focus of this thesis.

Another characteristic of the Anglo-Canadian courtroom is the need to establish causal connections between individual pieces of evidence. Judges and juries use information presented before the court to reach findings of fact. For example, a court might hear that someone bought a gun, raised it, and fired it at another person. This leads to the logical conclusion that the person who fired the gun caused the death of the other person, and to a finding of fact that a homicide has been committed by the first person. Even as clear a logical chain as this one contains inferences, however, and if we were to discover that the gun contained blanks we might reasonably contend that this earlier finding was incorrect. Causality and logical methods of proof are therefore fundamental to our legal system, and different types of evidence are only useful in that process insofar as they fit into existing causal scenarios.

These observations about the nature of fact-finding and the process of proof establish the context of the problem addressed in this thesis. From a legal perspective, this is a process governed by the law of evidence, a jurisprudence that seems to place great weight on forms of evidence derived from scientific methodology. This thesis seeks to address three particular questions raised by the privileged place science appears to have in the Canadian courtroom. First, we must ask why science has achieved this exalted status.

This question will be addressed in Chapter II, based on the hypothesis that science and the law of evidence have a shared historical origin. The second question is a how question. How does the law perceive science? This question will be addressed in Chapter III by looking at the historical adoption by the legal system of what is perhaps the most common and best accepted form of scientific evidence: fingerprinting. The last question that will be addressed asks what ramifications both theoretical and actual the special place accorded scientific evidence has on the law and on specific parties. Chapter IV will look at the approach taken with scientific evidence and contrast that sort of evidence with non-scientific evidence. It will focus on the way the oral history evidence used by native Canadians has been treated in Canadian courts. These three chapters also correspond with three significant periods of interaction between science and the courts, the first dealing with the 'enlightenment' of the seventeenth and eighteenth centuries, the second with the more 'utilitarian' period of the late nineteenth century, and the final one with a more contemporary situation.

Theoretical Framework

Conceptions of discourse drive the theoretical framework of the analysis used in this thesis. This theoretical framework has at its base a particular view of knowledge, a conception that is derived from the work of Michel Foucault. This conception sees knowledge as a series of discursively situated truth claims. Truth claims are subject to contestation both from within

the discursive framework in which they were developed and from outside that framework. There is, in this conception, no absolute Truth but rather a series of statements that may or may not be considered true in the future. Thus, a truth claim is a statement that claims relative truth, a claim that is developed within a particular discursive framework.² It is important to note that the truths produced by a particular discourse are often said to be absolute, particularly in the case of religious teachings. However, in the context of this analysis all these claims are treated as discursively situated regardless of explicit claims to absolute certainty, without addressing the question of whether such certainty is theoretically obtainable.

Often the discursive framework of a particular truth-claim is explicit. Statements such as “it is scientifically proven” emphasize the particular discursive framework in which a particular claim was developed. Such statements also emphasize the legitimating nature of certain discursive frameworks, where one might, to use the earlier example, privilege a “scientific” knowledge claim over a similar claim obtained from a psychic.

In the context of Anglo-Canadian adversarial system, there are two areas where courts and juries develop explicit truth-claims. In every finding of law is an implicit truth-claim about what legal rules are and what they mean.

² Dews, Peter, *Logics of Disintegration: Post-Structuralist Thought and the Claims of Critical Theory*, (London: Verso, 1987) at 171-192

The trier of fact, whether judge or jury, develops statements of facts, and it is difficult to see statements of facts as developed, perhaps by the trial judge, as anything but a particular series of truth claims made in the legal-discursive context. Despite the formal separation of law and fact in legal decision-making, it seems reasonable to conclude that these two functions of the court often become conflated. This is especially evident when an uncomfortable fact or law prevents a court from reaching a verdict that seems advisable, leading to formulations such as the constructive trust and similar legal fictions to avoid this problem.³

Truth claims arise only within particular discursive frameworks. This contention rests on the central observation that one must make a truth claim contextually. For example, one could say that it is true that the wall is red. This is a claim reasonable to those of us who perceive colors, but might not be reasonable to one who is red-green colorblind. In some sense, the statement is meaningless to the colorblind individual who might understand that the wavelengths of light reflected off the surface are within a certain range but not have the capacity to perceive the difference. The discourse here is one of color. The discourse of light wavelengths represents a different discourse. To say that a plant is green, to describe it poetically, lyrically, is entirely different from

³ Boyle, Christine and David R. Percy. *Contracts: Cases and Commentaries* (5th Ed.) (Scaborough: Carswell, 1994) at 296

stating the absorption spectrum of the chlorophyll and associated pigments in the plant. They operate in different discursive frameworks and generate their own truths within those frameworks.

“Truth” is centered on the form of scientific discourse and the institutions which produce it; it is subject to constant economic and political incitement (the demand for truth, as much for economic production as for political power); it is the object under diverse forms, of immense diffusion and consumption (circulating *through apparatuses of education and information whose extent is relatively broad* in the social body, notwithstanding certain strict limitations); it is produced and transmitted under the control, dominant if not exclusive, of a few great political and economic apparatuses (university, army, writing, media); lastly, it is the issue of a whole political debate and social confrontation (“ideological” struggles).⁴

Thus, we see truth as a social construction, a form of discourse constrained by the power structures that control or define what truth is. In the western societies Foucault is most interested in, truth is centered on science, around the apparatus of government, and probably around the courts. These are institutional bodies that set themselves up as arbiters of truth. In this conception, there is no Truth in the sense of universal truth that may be obtained, and truth exists only in the sense of a truth developed and proclaimed by a certain discourse.

⁴ Foucault, Michel *The Archaeology of Knowledge*, (London: Routledge, 1972) at 131-132

In order to understand what truth is in this conception, it is first necessary to understand what Foucault means by discourse. It is only from there that we can attempt to understand notions of truth and knowledge.

Foucault's conception of discourse forms the basis for his archaeological analysis of history. It is easy to misinterpret Foucault's conception of the archaeological method of history as a form of structuralism. Certainly, when one reads through the chapter titles of *The Archaeology of Knowledge*, with titles such as "defining the statement" and "discursive formations," such an observation seems understandable. However it is something Foucault specifically warns against, for while some of the tools of structural analysis are used:

My aim is not to transfer to the field of history, and more particularly to the history of knowledge, a structuralist method that has proved valuable in other fields of analysis. My aim is to uncover the principles and consequences of an autochthonous transformation that is taking place in the field of historical knowledge.⁵

A discourse is defined as "as the group of statements that belong to a single system of formation."⁶ We must therefore understand Foucault's conception of discursive formation before we can understand what he means by discourse. Discourse and the concept of a discursive formation thus remain fundamentally

⁵Foucault, 1972 at 15

⁶ Foucault, 1972 at 107

intertwined. It is important to understand the metaphor here, and the metaphor is essentially military. Let us imagine a formation of soldiers or airplanes. What is it that makes this particular group of people or objects a formation? The Oxford Dictionary defines formation as a “particular arrangement, e.g. of troops, aircraft in flight, etc.” Thus, in order to understand Foucault’s conception of a discursive formation and or discourse, we must understand just what sort of “particular arrangement” he has in mind.

A discursive formation depends upon the unity of statements that comprise a particular discourse. The unity of the discursive formation derives from the regularity inherent in the set of statements of which it is formed. This regularity can derive from the objects of those statements, from a thematic consistency that underlies them, from the types of statements made, or from the conceptual underpinnings of the statements. Where such regularity can be found, we are speaking of a discursive formation.⁷ Underlying this regularity there are a set of rules which delineate the regularity. To return to the metaphor of the military formation, there must be a set of conditions that define possible appropriate arrangements of men or machines, that is the rules that generate the formation’s unity and existence as a formation. Foucault

⁷ Foucault, 1972 at 38

contends that such rules must underlie discursive formations as well, and these *rules of formation* define the existence of a particular discursive division.⁸

The aim, then, of the archaeological project is to understand the arrangement of these discursive formations and the rules that underlie them.⁹ Whereas military formations are arrangements of men or machines, discursive formations are arrangements of *statements*. The definition of the discursive formation is therefore dependent upon an understanding of what statements are and how one can establish links between them.

Discourse is defined as “the general domain of all *statements*,”¹⁰ merely a restatement of the definition provided earlier. Thus, to understand what discourse is we must first understand the statement. Foucault removes from the concept of statement its existence in language. While statements are dependent upon language in order to allow their construction, language is not dependent upon any individual statements.¹¹ Statements are separated from language and yet also from the objects of a particular statement, thus, while phrased in a language and referring to perceived objects, statements are neither

⁸ Foucault, 1972 at 38

⁹ Foucault, 1972 at 38-39

¹⁰ Foucault, 1972 at 80

¹¹ Foucault, 1972 at 82-86

one nor the other.¹² Foucault does not define statements structurally, for they do not really exist structurally, rather they are defined *functionally*:

The statement is not therefore a structure [...]; it is a function of existence that properly belongs to signs and on the basis of which one may then decide, through analysis or intuition, whether or not they 'make sense,' according to what rule they follow one another or are juxtaposed, of what they are the sign, and what sort of act is carried out by their formulation (oral or written). One should not be surprised, then, if one has failed to find structural criteria of unity for the statement; this is because it is not in itself a unit, but a function that cuts across a domain of structures and possible unities, and which reveals them, with concrete contents, in time and space.¹³

The statement represents the functional interaction at the basis of language. It is the underlying rules that allow one to say that a particular statement is true or acceptable within a certain discursive formation which allow statements to exist. An analysis of language does not allow those underlying rules to be understood, and this explains the failure of any attempt to understand the statement only by reference to language. Statements can thus only be understood within the discursive formation, of which they form the base elements, they are statements because they are part of that discursive formation.

We can see the circularity. Statements can only be understood within discourse, yet discourse (or at least the discursive formation) can only be understood by reference to the statements that constitute it. This leads back to

¹² Foucault, 1972 at 86

¹³ Foucault, 1972 at 86-87

the conception of contextually derived truth discussed earlier. A statement can only be true or false within the discursive formation of which it forms a part, a truth in the sense of a socially constructed true statement which describes the world can only exist within a hegemonic discourse which defines true statements. The circularity in the definition of the statement is thus not a problem; it is an inherent artifact of the nature of human communication, of human discourse.

Discourse must somehow be related to the discursive formation, the rules of formation, and the statement. As we have seen, these are all interconnected concepts, concepts that exist only in relation to each other. We see that discourse yields a complex set of relations. Now this set of relations might be patterned by the organization of society itself, by the economic, social, behavioral and normative processes of society. These “primary” relations might be seen to describe not discourse itself or even the objects of discourse but rather are relationships that exist outside discourse or the objects of discourse. They describe the relations between institutions and other social structures. “*Secondary*” relations describe relations that exist only within discourse. These are relations patterned in discourse itself, relations which do not exist except in that they are articulated within discourse:¹⁴ “Thus a space unfolds articulated with possible discourses: a system of *real* or *primary relations*, a

system of *reflexive* or *secondary relations*, and a system of relations that might properly be called *discursive*.”¹⁵ These discursive relations are not entirely internal to discourse alone, although it is there where they are expressed, they characterize *discursive practice* in that they define the objects appropriate to a particular discourse, the relationships which must be defined within that discourse.¹⁶ Thus, as with the concepts of a discursive formation and the rules of formation, we can here see the two similarly interconnected conceptions of discourse and discursive practice.

Returning to the definition of discourse, we can see how these terms come together conceptually: “...the term discourse can be defined as the group of statements that belong to a single system of formation.”¹⁷ It is here that the key difference between the discursive formation occurs. Let us return once again to the military metaphor. Overlooking a battlefield, say a Neapolonic battlefield when military formations were still of use, one can see groups of men in some form of geometrical arrangement. One can easily ferret out several rules of formation as one watches formations change over time, and thus each individual group of several hundred men appears to be a formation. As one continues to watch the battle, one might note that some formations of men

¹⁴ Foucault, 1972 at 44–45

¹⁵ Foucault, 1972 at 45, author's emphasis

¹⁶ Foucault, 1972 at 46

¹⁷ Foucault, 1972 at 107

seem to operate according to different rules than do others. One group of formations tends to take the form of a square with colors at the center while the other forms lines and has eagles not colors. These individual formations also appear themselves to be in formation, one occupying a crest of hills while the other attacks simultaneously across the intervening field. The longer one watches, one begins to make out the shape of the *armies*, to understand that the rules which govern the individual formations are but a subset of the rules which guide the armies. We see two levels of structure. One level is at the regimental level, and it is to this that I compare the discursive formation. The other level is that of the army, of a particular discourse, which is to some extent only the sum of its regiments but also somehow more, in that those individual units operate in concert according to one rule.

Before leaving a metaphor which may have been pressed too far, there are several observations one can make which may well also apply to discourse. First, below the regimental level there are battalions and platoons, while above the army is the general staff and the organization of the state. Discourses thus may also be amalgamated or refined to higher or lower levels of structure, and to some extent the division of discourse and discursive formation might be seen as arbitrary. Second, unlike an army or a regiment, the statements that form discourse do not necessarily march to the word of a single commander, and it is here where the military analogy breaks down. Armies are built from the top

down, they are recruited (or impressed) by their officers. Discourses, on the other hand, arise from the bottom up; they are formed by the development of interlocking discursive practices over time.

To summarize: discourses and discursive practices tie discursive formations together. A discourse not only denotes a group of verbal performances, it defines performances which occur within a single system of formation, performances which form part of an interrelated series of rules and with particular objects which are consistent with the rule-base.¹⁸ It is important to note that these rules are not formal in the sense that they are set out or could easily be defined in a manner akin to grammar. These rules are implicit in the practice of discourse itself, in the way statements interrelate. It is by the analysis of these discursive practices that discourse can best be examined, according to Foucault.

Power and knowledge are intimately related according to Foucault. As we have seen when discussing the various attributes of discourse and of discursive practices, this seems to be a characteristic of Foucault's brand of analysis and argumentation, the defining of pairs of concepts which are co-dependent yet still somehow distinct. However the power and knowledge relationship is somewhat different than the relationship between discursive formation and conception of the statement, for example. It is not that power

and knowledge are not separable concepts, it is merely that Foucault is profoundly skeptical of the notion that either can exist without the contemporaneous existence of the other. This is a part of Foucault's analysis that will be returned to in Chapter Four.

Knowledge is tied to conceptions of discourse. Foucault deals with the possible contention that his descriptions of discursive formations might be descriptions of sciences or pseudosciences, that is groupings of people and ideas that have scientific pretensions.¹⁹ Foucault rejects this characterization, arguing instead that the goal is to establish *positivities* within groupings of statements, and in doing so to establish the boundaries of discursive formations and the internal dynamics which ensure their cohesiveness as such.²⁰ This is to establish in that grouping of statements:

...not as the closed, plethoric totality of a meaning, but as an incomplete, fragmented figure; to describe a group of statements not with reference to the interiority of an intention, a thought or a subject, but in accordance with the dispersion of an exteriority; to describe a group of statements, in order to rediscover not the moment or the trace of their origin, but the specific forms of an accumulation, is certainly not to uncover an interpretation, to discover a foundation, or to free constituent acts; nor is it to decide on a rationality, or to embrace a teleology.²¹

¹⁸ Foucault, 1972 at 107-109

¹⁹ Foucault, 1972 at 178-181

²⁰ Foucault, 1972 at 125

²¹ Foucault, 1972 at 125

The positivity of a discourse does not necessarily describe the rules of formation at an instant, rather it “characterizes its [a discourse’s] unity throughout time.”²² It characterizes the high-level rules of formation or discursive practices which allow one to say that a particular series of statements which have been made historically are in fact a unified discourse of one sort or another. Knowledge (*savoir*) is completely entangled in the positivities of a particular discourse.

These positivities are not knowledge or forms of knowledge, and they cannot be considered to define the instantaneous state of knowledge historically.²³ Foucault characterizes the analysis of positivities as a means of determining the rules underlying a particular discursive practice, the way in which discursive practices operate to generate a unified discourse.²⁴ If positivities are not knowledge, then what could knowledge possibly be? Knowledge is dependent upon positivities; they are the necessary precondition for the development of knowledge.²⁵ Knowledge rather refers to the elements formed within and by a particular discursive practice and specifically the objects of a discourse and the practices, singularities, and deviations which are characteristic of that particular discourse. It is in the regularity and consistency

²² Foucault, 1972 at 126

²³ Foucault, 1972 at 181

²⁴ Foucault, 1972 at 181

²⁵ Foucault, 1972 at 182

of these practices that one can consider a particular discourse as scientific or lead to the claim that it is a science, and it is science in Foucault's conception which leads to the modern conception of knowledge.²⁶

It is important here once again to differentiate between the two types of knowledge designated by the French terms *savoir* and *connaissance*. The above discussion refers to *savoir* that refers as much as anything else to the way a particular object of discourse might be considered to become an object of *connaissance*, that is an object of knowledge in the sense of that particular discourse. *Connaissance* refers then to "the relation of the subject to the object and the formal rules that govern it."²⁷ Thus knowledge refers to the objects of a particular discourse and to the rules which are perceived by that discourse as governing the interactions between those objects. Knowledge (and I refer to the *connaissance* form from now on unless otherwise mentioned) is not simply a statement in a discursive formation. One might make a statement which "makes sense" in the context of a particular discourse without necessarily and explicitly linking the object of that statement to that of other statements by a series of rules. Thus, for a discourse to produce knowledge it must not only define its internal rules, that is the rules of formation and of discursive practice, it must also define interrelations between the objects of the discourse itself.

²⁶ Foucault, 1972 at 182

²⁷ Foucault, 1972 at 15 note 2

We have come full circle. Discursive formations are formed of statements that are linked together by the rules of formation specifying the relationship between the statements to form a unified discursive formation. Discursive formations can be linked together by discursive practice to form discourses, and one can analyze these discursive practices by looking to the positivities which underlie them. Knowledge is generated by a particular discourse when statements about the objects of that discourse are linked together by a series of underlying rules; it is these rules which constitute the *savoir* and allow a particular statement to be considered knowledge for the purposes of that discourse. A truth claim is a statement of knowledge derived from a discourse that serves the social purpose of producing statements of truth. We thus have no Truth, no Knowledge, only relative claims coming from different forms of discursive construction. There is no means of evaluating whether a particular claim to knowledge or truth is correct, and perhaps no point in attempting the exercise, for as the next section will discuss, knowledge is not simply a neutral concept. It is implicitly tied in with conceptions of power and of social control.

Alternate Perspectives

Such a complex and groundbreaking theoretical perspective has naturally generated much commentary. One might look forward and discuss perspectives such as that of Baudrillard, who contends that while Foucault may adequately describe the modern, he does not adequately describe the current

post-modern condition.²⁸ One might also turn back and look to the work of Max Weber, whose conception of specialized, technological professions and formal legal rationality provided a more conventional institutionally-oriented approach to the study of the interaction between science and the law.²⁹ We will focus instead on the reactions to this sort of analysis by Jurgen Habermas, then turn to an analysis of the implications Foucault's work has on the practice of historical sociology, and finally examine the varying perspectives that have been used to examine the central question of this thesis: the relationship between science and the law.

Habermas essentially attacks the subjectivity inherent in the Foucauldian conception of discourse. The lack in Foucault's system of any ability to develop justified norms, to impose through its own structure any limitations on the justifiable use of techniques of power, strikes Habermas as a fundamental weakness.³⁰ In any event, the lack of even an attempt to generate a system for normative justification is fundamentally opposed to Habermas' project, which is essentially a reworking of Kantian ethics without recourse to the Kantian conception of reason.³¹ While Foucault himself does not provide any but the

²⁸ Baudrillard, Jean, *Forget Foucault*, (New York: Semiotext(e), 1987)

²⁹ Weber, Max, *Max Weber on Law in Economy and Society*. Max Rheinstein, ed. (Cambridge: Harvard University Press, 1954)

³⁰ Habermas, Jürgen, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*, William Rehg, trans. (Cambridge: MIT Press, 1988) at 49

³¹ see Habermas, 1996 at ch. 3

most individualized means for norm-generation, one could perhaps use his analytical structure without necessarily accepting the extreme relativism expressed in Foucault's work. Foucault responds to this charge by saying that any search for Truth is fundamentally flawed in the first place. If there is no metaphysical Truth, then we can get down to the important task of understanding how power, knowledge, and claims of truth interact.³² This essentially represents a questioning of the entire project both for the search for metaphysical Truth and for the normative justification that might ensue from such a search. Foucault simply contends that those who make such a search are after the wrong project.

Foucault's archaeological conception of truth seems more compatible with Lacan's notions of truth. For Lacan, like Foucault and in a manner similar to Habermas, a true statement is merely a statement the truth of which has been validated discursively, that is it is a justified claim to truth.³³ However, if one adds to this notion Habermasian notions of idealized discourse generating justified truths, the compatibility with Foucault disintegrates, for the linkage between knowledge and power removes the possibility of the existence of Habermasian idealized discourse.

³² Hunt, Alan and G. Wicham, *Foucault and the Law: Towards a New Sociology of Law as Governance*, (London: Pluto Press, 1994) at 11-12

³³ Dews at 237

This thesis represents a start at an analysis of the historical relationship between law and scientific modes of knowing. As such it is really an exercise in historical sociology, and as such we need to examine the effects of Foucauldian methodology upon that field and Mitchell Dean's approach to Foucault and to the field of historical sociology.

One feels that Dean would be quite uncomfortable with the notion of Foucauldian 'methodology.' He suggests that to speak of 'Foucault's methods' would be "as paradoxical as speaking of ascending stairs or cascading waterfalls in the graphic work of M.C. Escher."³⁴ Rather, Dean argues that Foucault's writings have led to what might better be described as a series of approaches, although Dean uses the term 'displacements,' whereby the history of ideas and of thought, that is the history of truth itself, became the goal. Foucault thus moved from "an analysis of the regularities of the formation of discourse, [...] toward the embeddedness of that discourse in institutional practices and power relations, and finally toward the relation of such practices to ones concerning the self and forms of ethical conduct."³⁵ Dean thus patterns what he terms 'critical and effective histories' not on critical theory but rather on the problematizing approach of Foucault, and he argues that it is this approach that is capable of creating a meeting of sociology with history. Foucault's work

³⁴ Dean, Mitchell, *Critical and Effective Histories: Foucault's Methods and Historical Sociology* (New York: Routledge, 1994) at 2

suggests an approach that does away with the methodologies of conventional historiography yet avoids the development of a rigid theoretical or methodological framework.³⁶ In keeping with the notion of an approach as opposed to a methodology, Dean describes historical sociology "as any reflexive attempt to develop and elaborate socio-theoretical concepts within a field of positive historical analysis."³⁷

Dean defends Foucault against the argument that his historical studies can only properly be studied in the context of the Weberian concept of rationalization, leading toward an institutionally based approach mentioned earlier. This approach is institutional because of Weber's requirement in his definition of law that there be a staff of people who act to ensure conformity to the law.³⁸ This requirement lies at the heart of his characterization of the modern state as centered on bureaucratic forms of administration.³⁹ The rationalization of the law is fundamentally tied to the "administrative machinery," indeed the growth of that administrative technology being tantamount to rationalization.⁴⁰ This would appear to be centered upon the

³⁵ Dean at 2

³⁶ Dean at 13-14

³⁷ Dean at 21

³⁸ Hunt at 103, Weber at 17

³⁹ Hunt at 132

⁴⁰ Weber at 224-224

state and political authority, but Weber specifically argues that a legal order exists:

...wherever there are at the disposal of one or more persons who hold themselves ready to use them [psychological or physical coercive means] for this purpose in the case of certain events; in other words, wherever we find a consociation specifically dedicated to the purpose of "legal coercion."⁴¹

This would seem to suggest that legal orders need not be centered on the state, but Weber makes this statement in the context of discussing instances where modern state law treats the norms of extra-legal corporate groups.⁴² The apparatus of legal coercion thus remained centered upon the state's bureaucratic monopoly of coercive power. This would appear to be inimical to the Foucauldian notions of discursive processes discussed earlier because of the formal organizational structure inherent in this model.

Dean argues against scholars such as Dreyfus, Rabinow and Dews, who argue for a rapprochement between Weber and Foucault, arguing that such a rapprochement is impossible.⁴³ Weberian rationality, according to Dean, is based upon the dominance of a particular type of social action, action that is either instrumentally or purposively rational. These social actions are institutionalized in the form of bureaucratic practice, leading to a rational-legal

⁴¹ Weber at 17

⁴² Weber at 17

⁴³ Dean at 59

form of dominance.⁴⁴ This raises a paradox for by the institutionalization of this form of rationalization, specifically the specter of its own extinction through the increased dominance of means over ends.⁴⁵ This might lead to a situation where, for example, the methodology of bureaucratic government subsumes the objectives of that government. Eventually, the committee exists to have a committee not to make decisions. Foucault's conception of rationality avoids this paradox by relying instead on historical formations that possess both discursive and non-discursive dimensions. Rationality operates through social institutions and the practices that "traverse" them and is not dependent upon "a reduction to the attributes of constituent subjects."⁴⁶ Foucault's analysis then allows for a sort of rationality that may be said to be rational irrespective of the irrational actions of individuals. Indeed, the actions of individuals, under Foucault's archaeological approach, are interesting only insofar as they provide a peek into the underlying discursive formation. To Dean, to treat "rationality as an intrinsic feature of the human subject is to foreclose an analysis of the discursive conditions of sense and the dependence of forms of rationality on specific discursive forms."⁴⁷ If we are to accept Foucault's "discovery" of the

⁴⁴ Dean at 61

⁴⁵ Dean at 61

⁴⁶ Dean at 59-60

⁴⁷ Dean at 72

discursive formation,⁴⁸ we must then reject reliance upon rationality as inherent characteristic of human subjects.

Another more recent approach that emphasizes the importance of the state in the development of forms of knowledge is that of the state formation theorists, exemplified by the work of Corrigan and Sayer.⁴⁹ Dean takes Corrigan and Sayer to task by suggesting that they place too much emphasis upon state institutions and a coherent effort by the state to form identity through what they term 'moral regulation.' Dean suggests that this approach leads to the equation of moral regulation with that of state formation, leading to locating the practices of political subjectification uniquely within the state. He contends that Foucault's work suggests that these practices lie in "multiple and heterogeneous locale[s]" and cannot be identified with the institutional structures and practices of the state alone.⁵⁰ In essence, Dean accepts Foucault's notion of power/knowledge, a notion that leads to an expectation that forms of social and moral regulation are diffusely located throughout society.

Foucault's linking of power and knowledge will be explored in more detail in Chapter IV, but even the archaeological approach described earlier

⁴⁸ Dean, introduction

⁴⁹ Dean at 144-147

⁵⁰ Dean at 165, 149-150

would seem to cast serious doubt upon any analysis focussed primarily on state institutions, whether it be that of Corrigan and Sayer or that of Weber. Specifically, the archaeological approach would seem to embrace a profoundly decentered and fluid view of discourse, a view that seems inimical to centering moral regulation in the state.

From the general question of how to approach history, we now move to the more specific question of how to approach the interaction between science and the law. We started by looking at how the interaction between science and the law might be analyzed in a Foucauldian archaeological context. Next, we turned to more general critiques of the Foucauldian approach, and to the place of Foucault's work in the study of history. What has not been addressed is the existing literature on the relationship between science and the law. We now turn to that area of scholarship in order to see how the approach used in this thesis fits with the approaches already used in this area.

David Nelkin has identified three basic approaches to the problem of understanding the relationship between science and the law. Nelkin looks at three different schools of thought used to develop models and possible solutions for understanding the “breakdowns in collaboration between law and science.⁵¹” The first of these three schools of thought is termed by Nelkin the “trial pathology approach.” This approach, characteristic of American legal

scholarship, sees the fundamental problem as that of the misuse of scientific evidence by judges, juries, and lawyers caused by the systemic pressures of the adversarial process. The second approach identified by Nelkin is what he terms the "competing institutions" approach. This approach sees law and science as "powerful and often rival institutions," and drawing upon the sociology of science literature it "offers both social conflict and social constructionist accounts of the interaction between legal and scientific institutions." It is therefore the competing interests at stake that is in question in this mode of analysis. The third approach is termed the "incompatible discourses" approach. Identified most closely with the work of Luhmann and Teubner, this approach is focussed around autopoietic theory and the function of law and science as systems of knowledge generation.

The problem with the first approach is that by concentrating on the misuse of scientific evidence by the courts it tends to focus on distinguishing between 'junk' and 'good' science. As Nelkin suggests, this approach generally accepts the status of scientific truth claims as true, assuming that the science is good, and thus does not differentiate between legal and scientific truths. The adversarial nature of courtroom procedure is thought to lead to a corruption of science. However, if this is the case then concentrating on 'good science' moves the arena of debate outside the courtroom and into the scientific

⁵¹ Nelkin at 14.

community, a community that is quite divided in its opinion of what good science is. This approach also neglects that what may be good science to scientists within a particular scientific domain might be insufficiently conclusive for legal purposes, that the value structures of scientists and lawyers are not necessarily the same. It also neglects the extent to which certain sciences have been colonized by legal values. For example, this thesis will examine fingerprinting, a technical/scientific discipline that was developed for the purpose of providing information in trial proceedings.

The second approach identified by Nelkin is the 'competing institutions' approach. This approach views law and science as "powerful and often rival institutions [...], which coexist or collaborate under conditions of unstable compromise."⁵² This type of work, most closely identified with the work of Sheila Jasanoff,⁵³ focuses on the competing interests at stake in the interaction between science and the law. For example, in her analysis of the OJ Simpson trial, Sheila Jasanoff suggests that the trial is an arena in which visual authority must be created, and that it was the failure to establish the requisite visual authority, a failure related to the authoritative position of the judge, that

⁵² Nelkin at 15

⁵³ Jasanoff, Sheila, *Science at the Bar: Law, Science, and Technology in America*, (Cambridge: Harvard University Press, 1995)

prevented forensic DNA evidence from becoming convincing.⁵⁴ Truth claims are seen as negotiated and based upon different forms of authority.⁵⁵ As Nelkin remarks, this approach tends to see strong similarities in law and science rather than concentrate on the differences, as do the other two approaches.

The third approach focuses upon discursive practices and thus encompasses to some degree the Foucauldian approach taken in this thesis. This approach is exemplified in the work of Luhman and Teubner, who have developed theories around the notion of autopoiesis. "An autopoietic system produces and reproduces its own elements by the interaction of its elements."⁵⁶ Not only do such systems create an autonomous order in and of themselves, they also generate internally their own elements of that order. In this view, law is seen as a separate communicative system with a particular element, the legal act, which is a communicative event that results in change in legal structures. The key to such a system is its circularity in that it is essentially self-generative.⁵⁷ This view of law has been seen as a solution to the need of traditional theories of legal justification to seek normative constructs outside the law, and argues instead that law is essentially a self-justifying system. This view, one that does

⁵⁴ Jasanoff, Sheila, "The Eye of Everyman: Witnessing DNA in the Simpson Trial" *Social Studies of Science* 28/5-6 at 713-740

⁵⁵ Nelkin at 15

⁵⁶ Teubner, Gunther. "Introduction to Autopoietic Law" in Gunther Teubner Ed. *Autopoietic Law: A New Approach to Law and Society* (New York: Walter de Gruyter, 1988) at 3

⁵⁷ Teubner, 1988 at 3-5

not seem entirely antithetical to the Foucauldian approach, will be discussed again in the Conclusion.

Nelkin ultimately argues that while there is something useful to be drawn from each of these competing approaches, the focus should be on explaining "law's operations in terms of its various goals."⁵⁸ Law's goals should not be seen as identical to those of science and might result in verdicts that appear to be at variance from scientific 'truth.' For example, one of law's goals is the authoritative resolution of disputes in the context of individual cases,⁵⁹ yet this is not necessarily one of the goals of science. Indeed it could be argued that all sciences, social sciences included, revel in the creation of areas of dispute since such disputes make the practice of science far more interesting and may even promote the career opportunities of the disputants. Another of the central goals of the law identified by Nelkin is that of creating a framework of rules that can actually be followed, something he describes as 'governance,' a goal that is sometimes at odds with that of truth finding.⁶⁰ Nelkin sees the competing institutions approach as best suited to analyzing legal goals.⁶¹ As well, the incompatible discourse approach may, in Nelkin's view, go too far in

⁵⁸ Nelkin at 23

⁵⁹ Nelkin at 23-24

⁶⁰ Nelkin at 24

⁶¹ Nelkin at 25

its characterization of legal and non-legal discourses as distinct.⁶² Nelkin therefore seems to favor an approach that combines the competing institution approach with some of the sensitivity to discursive analysis present in the Leuhman/Teubner or a Foucauldian approach.

While Nelkin's analysis is useful in clarifying the sort of approaches that have been used in the study of the relationship between science and the law, he analyzes those approaches in the context of an attempt to understand and modify the contemporary relationship between these two areas. The aim of this thesis is not that, rather its aim is to examine the historical relationship between science and the law in the context of forensic evidence, specifically fingerprints, and to try and contextualize and problematize that relationship in a contemporary context. It thus would seem to fall within what Mitchell Dean has termed "historical sociology."⁶³ While an argument will be made that there are strong historical connections between the law of evidence and science, these connections will be made at the level of discourse and not at the institutional level. While receptive to Nelkin's criticism of discursive approaches, the analysis presented in this thesis falls firmly into what he characterizes as the 'incompatible discourses' approach, an approach informed by Michel Foucault's archaeology and the commentary of Mitchell Dean.

⁶² Nelkin at 29

⁶³ Dean at 1 to 22

Organization and Methodological Approach

The overall approach of this thesis is to apply Foucault's archaeological approach in the context of the historical relationship between the law and scientific expertise. A comprehensive survey of this problem is beyond the scope of this thesis, so the concentration will be on three examples of the interaction of law and science. Three major types of evidence will be used. Jurisprudence or case law will play an important role in constructing the problem to be addressed and will form a significant part of the analysis presented here. However, the legal sources used by the profession to authoritatively resolve disputes reveal only one dimension of the issues, the technical and doctrinal aspects of expository legal reasoning. Historical sources allow the underlying concerns of actors and institutions in the legal process to be contextualized, therefore historical sources form much of the basis of this thesis. Secondary historical sources and historiographical analysis represent an important part of the evidence used. Finally, archival research has been instrumental in the development of a major portion of this thesis.

Following the spirit of the archaeological approach, the concentration here has not been on dates and times and formal decisions but rather on what people were saying and the way that they said it. Describing a discourse or a discursive formation requires a bit of reading between the lines; often the sort of discourse underlying a particular document is implicit rather than explicit.

The first example addressed will look back to the birth of the modern Anglo-Canadian law of evidence, dating back to the eighteenth century. The aim is to show that the discourses of evidentiary law and those of modern science share a common heritage in the birth of probability theory, a heritage that dates to the seventeenth century. This chapter seeks to explain, if only to a limited extent, the acceptance by legal discourses of statements held to be true in scientific discourses, along with the systematic exclusion of forms of truth-telling that do not share this common genealogy.

The third chapter seeks to address the second question, that is how does legal discourse perceive scientific discourse? This shall be done by examining the historical acceptance by the law of fingerprint evidence in the early part of the twentieth century. This provides an ideal example of the interaction between discourses, as it will be shown that not only do legal and scientific discourses interact, so too do the discourses of policing. As well, we can see how fingerprint examiners created their field of expertise and conducted themselves in the courtroom so as to ensure the acceptance of their conclusions by the legal system. Thus, by looking at what may well be the archetype of scientific evidence to the contemporary courts, we can begin to unravel the complex relationship between the discourses of the scientific expert and that of courts and lawyers.

The final chapter will attempt to problematize the relationship between science and law by asking just what impact the importance and exclusivity afforded scientific expert witnesses has on those who make truth claims arising from discourses that are not seen as scientific. In Canada the most obvious example of a discourse that was essentially ignored by the courts is that of native oral history. This chapter shall examine the place of native oral history in light of the *Dalgamuukw*⁶⁴ decision, where the Supreme Court of Canada appeared to create a separate class of evidence for native oral history.

⁶⁴ *Dalgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010

Chapter II: Probability Theory and the Birth of the Law of Evidence

The idea that the law of evidence and science share intellectual roots is certainly not a new one, but the approach taken here is based upon a central observation. Modern evidentiary law and modern science are predicated upon notions of probability, indeed the notion of evidence itself is one that owes its existence to the musings of early probability theorists. If this observation is correct and the law of evidence and science share a common genesis in probability theory, this could go a long way to explain the continued special place the evidence of scientists has in the courtroom. While science and the law may be separate discourses today, they share a common discursive heritage in probability theory. In a fundamental way, it may be argued that the operative discourse of the court is at least partially a discourse of probability theory. Scientific discourse is therefore acceptable to the courts because it forms part of a shared discourse about probability and causation, that is authentication, in the world at large. Psychic evidence and oral history are thus not admissible because they are outside this shared discourse.

Contemporary trial procedure, where witnesses are called, fact and law are divided, and the facts are weighed in light of the law in order to produce a verdict is a reflection of the late modern state. This entire process involves a

specific conception of the universe that is a direct product of enlightenment (1740-1820) thinking. Specifically, it is a product of the new conceptions of probability that emerged in the early seventeenth century. Now, this has been described a unidirectional process, but I do not believe that this is an accurate characterization. Some of these conceptions of evidence predate the development of the modern conceptions of probability and had a direct influence on its development. Law, social theory, and modern conceptions of probability are intimately connected. Much of modern probability theory was developed in conjunction with attempts to understand legal process and the practical problems faced by the courts.

This chapter will look at a relatively superficial level into the historiography of the development of probability, focussing primarily on the work of two scholars. To some extent, this is due to the sort of scholarship that is available. However, to an even greater extent there has been remarkably little work done on the great change in the conceptions of evidence in a legal context. One scholar, Barbara Shapiro, has written directly on this point. Another, Ian Hacking, takes more of a philosophical/historical viewpoint, although he does discuss law to some extent. Since Hacking provides probably the best overview as to the key changes in thought which occurred during the mid-seventeenth century, this chapter will start by reviewing his analysis of how and why this change occurred, concentrating especially on how some of the

individuals who were instrumental in the development of probability were themselves intensely interested in legal problems. Second, it will look to the work of Shapiro, who concentrates on England during this time period to look at how the law of evidence changed, partly as a result of the fundamental change in world-view generated by the new probability theory.⁶⁵ Third, it will look at some of the individuals involved in this change, and discuss how they show explicit and implicit awareness of what were then new developments in probability, especially in the context of the development of the reasonable doubt standard of proof in criminal trials. Finally, we shall return to the archaeological analysis presented in the introduction to try and make more sense of this history in the context of contemporary notions of expert testimony.

Mediaeval Notions of Probability

We operate in a world where statistical inference and notions about probability are commonplace, but this world has not always existed. Prior to the enlightenment, there was no conception of probability as a body of theory on its own. Even where some understanding of the laws of chance, as in the

⁶⁵ Ian Hacking, *The Emergence of Probability* (London: Cambridge University Press 1975); B. J. Shapiro, *Probability and Certainty in Seventeenth-Century England* (Princeton: Princeton University Press 1983)

throwing of dice, existed, there was no understanding that these rules might be applicable to other aspects of daily life.⁶⁶

Ian Hacking posits several possible explanations for this void, all of which he rejects. First, in a truly deterministic world thoughts about determinism might preclude any comprehensive inquiry into chance. Hacking argues that this explanation is absurd because modern conceptions of probability developed at precisely the same moment that Newtonian mechanics and the rest of the new science seemingly turned the world into a most deterministic place. Second, the determinism of Newton differed fundamentally from a conception of direct divine determination by the gods, and the pious would be loath to pry too far into the actions of the gods. This is rejected because there were many impious people gambling outside a divine context, who would certainly have had use for any analysis of chance which might improve their odds. Third, there seems to be a requirement for empirical examples, that is equiprobable sets, which primitive randomizers could achieve. This is demonstrably false, for early ivory dice examined by Hacking were wonderfully well-weighted. The last theory is economic, and suggests that economic need drove the development of probability theory in renaissance

⁶⁶ Ian Hacking, *The Turning of Chance* (London: Cambridge University Press 1990) at 1-10, Hacking, 1975 at 1

Europe. Once again, the theory seems defective because economic need seems to significantly predate the development of probability theories.⁶⁷

Hacking argues that all of these theories are essentially external to the mathematical and philosophical framework from which probability theory was generated. Rather than look to external historical events and patterns, Hacking prefers to analyze the internal dynamic, and argues that the technological foundations in arithmetic are key to understanding the emergence of probability theory in Europe, for example, the adoption of Arabic numerals as opposed to the Roman system, a change which makes relatively complex arithmetical operations much easier. He dates the emergence of probability to the mid-seventeenth century, not to any one event. Rather, probability theory emerged because of the intersection of a variety of changes in worldview which came to a head around 1660. Essentially, there was a 'family of ideas' which was absent in the world until this time, although individual elements of them had existed previously. When those ideas became commonplace among the educated in this time-period, the concept of probability theory became tenable and indeed almost obvious, and our modern conceptions of probability ensued.⁶⁸

The approach underlying to this approach, and one that makes sense from a philosophical viewpoint, is that it is the development of discourses that

⁶⁷ Hacking, 1990 at 2-5

⁶⁸ Hacking, 1990 at 10-15

drives changes in world-view.⁶⁹ This approach is reasonable in the Foucauldian context since the basis of his genealogical approach (and a sub-text of his archaeology) is one of contingency. All discourses are contingent upon earlier discourses, and the tracing of the development of modern thought is thus genealogical in the sense that any discourse must be placed in the context of its parent-discourses. One might criticize Hacking by arguing that his more philosophical approach is biased toward the more formalized discourses of natural philosophy and away from less formal but still important discourses. This may neglect, from a more historical viewpoint, the underlying historical context of the intellectual movements described. However, if both the modern law of evidence and modern science are contingent upon the development of a technology of probability, and if the genesis of that technology can be known, then we have come a long way toward genealogically linking the discourses of law and science. Hacking's work is thus useful in this context insofar as it succeeds in demonstrating when and where modern probability theory originated. We must remain careful, however, to avoid tying notions of causality to the view that the emergence of probability theory was necessary to the development of the law of evidence. In no sense can probability be said to have 'caused' the development of the law of evidence based on the evidence

⁶⁹ Hacking, Ian, *Rewriting the Soul: Multiple Personality and the Sciences of Memory* (Princeton: Princeton University Press 1995), introduction

presented in this thesis. With that caveat, we now turn to Hacking's analysis of the development of conceptions of probability.

Hacking starts by looking to the meaning of the word “probable” as it occurs in the writing of Thomas Aquinas as an example of the mediaeval approach to this issue. In mediaeval thought there was a distinction between knowledge and opinion. Knowledge, in the Thomosian world-view, does not have the same objects as opinion. Knowledge is understanding of universal truths which are of themselves necessarily true, and as such it is concerned with “first truths,” things which are of themselves necessarily true, and secondary truths, which are derived by demonstration from first truths. The proceeding is by deduction alone. Opinion, in contrast to knowledge, refers to beliefs which are not achieved by this type of demonstration. It is in this sense that Aquinas used the word probability: “The primary sense of the word *probabilitas* is not evidential support but support from respected people.”⁷⁰ To the mediaeval mind, something is probable if respected individuals agree that a proposition is correct. Interestingly, Hacking contends that this conception of the word “probable” survived into the English of the eighteenth century, for example: “We have read Gibbon saying that something probable is false. In other words, an opinion commended by authorities is in fact wrong.”⁷¹ Thus, while the word

⁷⁰ Hacking: 1990 at 22-23

⁷¹ Hacking: 1990 at 23

existed in mediaeval times, the concept behind what is probable was completely different from a modern conception of probability.

The concept of evidence also lacked its modern sense in the mediaeval world. Hacking characterizes the modern concept of evidence as inductive, and suggests that the conception of inductive proof does not really appear in philosophy earlier than the seventeenth century (although there was some foreshadowing) because the conception of evidence required did not yet exist. Now, it should be noted that “evidence of the senses” or testimony (as in opinion) did exist, but it occurred as secondary aspects of things themselves (sort of a notion of Platonic forms seems to be underlying this). The Renaissance resulted in turning this equation around. Now evidence was the primary thing and testimony and authority were primary, and the evidence of things considered secondary.⁷² The underlying thing was now determined from the evidence of the senses, as determined by testimony and authority. What was lacking was not the ability to draw conclusions from evidence (Hacking provides the example of smelling a pigsty and inferring its existence), what was lacking was a description of the process of moving from evidence to explanation. While evidence became available in an almost modern sense, evidence itself had not become the object of knowledge.

⁷² Hacking: 1990 at 32-33

This is fundamentally tied in with the conception of signs, and at this point perhaps a brief description of Ian Hacking's conception of evidence is needed, as this is neither clear from the brief discussion presented earlier nor is it entirely uncontroversial. Hacking argues that the study of probabilities was retarded from the time of Aristotle until the seventeenth century because the conception of evidence was not sufficiently developed. During this period, evidence centered on testimony or authority, conceptions that were related to people (that is, individual impressions or conclusions) but not directly to things. In the context of law, this can be demonstrated in English trials, where sworn testimony of witnesses (the trial of oaths) who were often also jurors was common, and even more obviously in the earlier trial by ordeal or by the oath-taking of the accused.⁷³ For Hacking, these methods demonstrate the two modes of evidence available. The oath taking is direct evidence of important men (or, unlikely, women) of the community. The trial by ordeal represents a way of looking for signs from God. These "signs" of God or of nature do not follow the form of our own conceptions of evidence, but refer back to the great books, to authority, to the testimony of great men.⁷⁴

At this point it would probably be a good idea to oppose this notion of evidence to a more modern notion of evidence. David Schum provides

⁷³ D. A. Schum, *The Evidential foundations of Probabilistic Reasoning* (New York: John Wiley & Sons 1994) at 13, 55-57

probably the best definition, but it is interesting to note that both he and Hacking choose only to provide relative definitions. Essentially, Schum associates the term *evidence* with the terms *fact*, *data*, *information*, and *knowledge*, all portions of the term.⁷⁵ Perhaps the best way to get at the modern conception, and to show how evidence is related to probability, is to provide an example. We have all seen the Polaroid commercial where a dog is unjustly accused of upsetting the trash. One might reasonably infer from the upset trash that the dog was the guilty party, for the trashcan is large and one might expect a large animal to have upset it. It seems likely, that is probable, that the dog upset the trash. The dog then, through the marvels of Polaroid film, captures the cat knocking over the trashcan. Thus, despite the fact that it is likely that the dog had done it, this reasonable idea is falsified by the picture. Both the picture and the upset trash itself are *evidence* in that they are things that speak the source of the evidence itself. They allow us to postulate a mechanism (and to determine the most likely guilty party) by induction, for even the photo does not prove that the dog did not upset the trash the *last* time. This is not to say that, barring the technological marvel of the camera and the general distaste for cats, a mediaeval person could not have reached the same conclusion. What it is to say is that the *way* in which these sorts of things were thought about was

⁷⁴ Hacking, 1990 at 42-56

⁷⁵ Hacking, 1990 at 16

significantly different. A Mediaeval thought process might go: I've seen a dog upset the trash, so when the trash is upset I interpret this as a sign that a dog did it; this is knowledge by experience, not through inductive reasoning.

This world-view was about to be radically altered by a series of events in the mid-seventeenth century, and the ramifications of this change would have great consequences for the law of evidence.

The Birth of Probability

Probability puzzles arrive quite early. Hacking gives examples dating back to Cardano (1564), Peverone (1558), and possibly as far back as 1380. These were attempts to apply what was then the new algebra to gaming problems, but lack of sophistication, essentially a technological limitation, prevented the success that occurred later. Galileo himself looked into this sort of problem, and was explicitly concerned with the relative frequencies of different outcomes. Hacking describes this sort of probability calculus as a “calculus of frequencies.”⁷⁶ This sort of thinking clearly prefigured the development of probability theory, but Cardano's work was not widely circulated, and these conceptions did not enter the mainstream of scientific thought for another century.⁷⁷

⁷⁶ Hacking, 1990 at 50-53

⁷⁷ Hacking, 1990 at 56

The foundation of probability calculus is commonly attributed to a series of letters exchanged between Pascal and Fermat in 1658.⁷⁸ For the purposes of this paper, the mathematical aspects of the development of this series of techniques will not be addressed here, except to ask the reader to recall the combinations and permutations we all calculated in high-school math—they are a direct result of what occurred during this time⁷⁹. There are two aspects of this correspondence and the resulting interest in probability problems of interest here. First, this was not just a private correspondence between two men, these letters were made public fairly quickly and this whole development occurred in a social setting that allowed for the rapid propagation of these ideas. Second, following this initial break-through, there was a rapid and concerted interest in these ideas and development of them that spread throughout France and on to England.

Pascal and many of the other figures mentioned here met at the salon of the Duke de Roannez, a mathematical amateur who knew most of the key figures in the subsequent developments. Hacking even suggests that we might call Roannez the “midwife” to the birth of probability theory.⁸⁰ Exactly how we place these figures: Pascal, Fermat, Leibniz, and Méré, is not important. What

⁷⁸ Hacking, 1990 at 11-13; Karl Pearson, *The History of Statistics in the 17th and 18th Centuries* E. S. Pearson Ed. (London: Charles Griffin & Company 1978) at 165

⁷⁹ Hacking, 1990 at 63-67

⁸⁰ Hacking, 1990 at 58

is important is that they all knew each other, and one of the important people who was key in bringing together the mathematicians of Paris was Roannez. The result of several years of discussion was the publication of the Port Royal *Logic* (*La logic, ou l'art de penser*) which was written by associates of Pascal at Port Royal and went through five editions and was widely translated throughout Europe.⁸¹ The final chapters of this book deal with non-deductive reasoning, that is inference and decision in cases of uncertainty, and theorizing (the speculative creation of theory to explain phenomena). It splits evidence into three kinds. The first two, are demonstration and testimony, and thus not significantly different from the earlier renaissance conceptions. The third is “internal” evidence, evidence “relating both to the senses and the understanding, depending upon our own observations and repeated trials of the issues and events of actions of things, called experience.”⁸²

Evidence, Probability, and the Law 1

One might continue and examine the growth of probability technology over time, a technology that, when combined with the development of political arithmetic, led to the development of modern statistics.⁸³ Given the limited aims of this chapter, that is not necessary. What has been described is a fundamental change in the conception of evidence in the scientific context that

⁸¹ Hacking, 1990 at 73-74

⁸² Hacking, 1990 at 83

occurred as a result the Port Royal *Logic* and other works published around this time. We now must look to the legal history of this period to see what impact this, one almost must call it a “paradigm shift,” had on the operation of law in England.

The first observation to make is that the early workers in probability theory were intensely interested in legal problems. One of the early workers in this area was Leibniz, who looked to probability as an epistemic notion, one that could be applied to situations where decisions must be made under conditions of uncertainty, as a logic for contingent events. He attempted to apply this sort of reasoning to legal situations such as the dividing of estates. Indeed, his notions came partly from legal notions that existed in Romanist jurisprudence, where recognition of the distinction between what causes something to happen and how we know that it has happened was essential (a distinction that had been lost in English law).⁸³ However, the focus will be on English law, and the developments in probability theory had a direct impact on the view of evidence in that context.

Barbara Shapiro has emphasized two major ways in which the scientific revolution of the seventeenth century impacted the law. The first was an interest in schematization, reflected in Sir Matthew Hale’s *Analysis of Law* and in

⁸³ Pearson at 141-185

⁸⁴ Hacking, 1990 at 85-88

the growing number of casebooks and court reports which were developed during this period⁸⁵. The second major impact is the one that will be dealt with here, the impact of notions of probability, that is degrees of certainty in jurisprudence. The impact of the inductive approach is seen in the work of Bacon and Hale. As mentioned earlier, it seems clear that these and other 'leading lights' of English law were well aware of the new modes of thought which were sweeping scientific circles, especially as these two men and many others were members of both legal and scientific circles—there was considerable overlap.⁸⁶ In order to put the changes implied by these concepts into their historical framework, we must first look to Shapiro's description of methods of proof that existed prior to this time-period.

In the early mediaeval period, there was little significant difference in law in Europe and in England. There was a shared system, with many local variants, but which used as its methods of proof trial by ordeal and through battle. This system essentially left the issue of proof to God; both ordeal and battle can be seen as means to ascertain God's views on the matter in question. This all changed in 1215 when the Church condemned these methods, and led to a split between Continental and English Law.⁸⁷

⁸⁵ Shapiro, 1983 at 168

⁸⁶ Shapiro, 1983 at 168-173

⁸⁷ Shapiro, 1983 at 173

On the Continent, the Roman-canonists approach led the way. This was the combination of canon law with a revival of the Roman code law. Obviously, this system has many points of difference when compared with the Common Law approach taken in England (which was more or less continuous with the old mediaeval system), but we will look at only one aspect. The system of proof developed on the continent was based upon formalization of a variety of rules of evidence. Essentially, a ranking approach was taken, which led to a sort of calculation of proof through 'proof fractions.' Under this system, for example, two good witnesses and a confession were required to prove murder. Another example of the workings of this system are the series of steps that were required before one could proceed to torture in order to extract a confession. One looked to circumstantial evidence, and this is where this differentiation began.⁸⁸ Circumstantial evidence was interpreted as a series of signs, indications, and presumptions and should not really be considered entirely equivalent to our modern Anglo-Canadian conception of circumstantial evidence. If the evidence was of significant weight, then one could proceed to torture. This system led to an early professionalization of the legal system, for the myriad technical rules required a high degree of competence in order for the Roman-canonist approach to be effective.⁸⁹

⁸⁸ D. M. Paciocco and Lee Stusser, *The Law of Evidence* (Concord: Irwin Law 1996) at 20

⁸⁹ Shapiro, 1983 at 174-175

In England, a very different approach was taken. England avoided the need to develop complex rules of evidence (or to borrow them from the Romans) through the development and extension of the jury system. This system substituted the common sense of the everyday Englishman for the rule of evidence, what Shapiro describes as a “surrogate for the development of the laws of evidence.”⁹⁰ We could follow the development of the jury in the late-mediaeval period up to the seventeenth century, but there are only two developments that occurred prior to the time-period in question that should be emphasized.

These developments were driven (Shapiro argues) by the increasing complexity due in part to the rapid urbanization of England, which occurred in this period. One of the key issues was that the juries of this period could not be assumed to have the familiarity with the case and the individuals involved. The first development, in 1563, was the passing of legislation that allowed witnesses to be compelled to testify and which made perjury a crime. This demonstrates two aspects of Shapiro’s thesis. First, witnesses, as opposed to the jury, were now assumed to be necessary to provide important information concerning the case; no longer could the knowledge of the parties involved and the background circumstances be assumed to be common knowledge of the jury. Second, lying on the stand was clearly perceived to be a problem, and a problem in which the

⁹⁰ Shapiro, 1983 at 175-178

state must take an interest. However, it is important to note that juries could still consider personal knowledge in the making of their decisions.⁹¹

The second major development was the expansion of the role of the Justice of the Peace, essentially serving a gate-keeping function, with the Marian bail statutes in the mid-sixteenth century. They were now required to evaluate evidence. This development is important as it led to a professionalization of a particular aspect of the English justice system. The need to provide guidance for these new Justices led to the emergence of numerous handbooks which suggested the appropriate means by which to evaluate evidence. These handbooks showed a dramatic influence of the Continental approach, with elaborate checklists of the bits and pieces required in order for a complaint to proceed. An example occurs in the handbooks written by eminent jurists of the day: Coke and Hale both devised this sort of thing, and there were numerous borrowings from Continental evidential practices. What is clear, however, is that while this sort of application of Continental law was considered reasonable in the context of the Justices of the Peace, it was not considered appropriate to the English Jury trial.⁹²

By the mid-seventeenth century, there was clearly a need for some sort of evidential procedure to be developed in England. This need was derived

⁹¹ Shapiro, 1983 at 176-178

⁹² Shapiro, 1983 at 176-178

from growing urbanization and the increasing central authority of the state, and the increasing professionalization of the legal system. A borrowing from the sciences was in order, and the new probability theory would certainly fit the bill. Contemporaneous with these developments were the developments in 'political arithmetic' which, when mated with the new probability theory, would lead to the development of modern statistics by new conceptions of record keeping and analysis, and is explicitly connected with state and economic interests of the time.⁹³

The key issue here was the availability of this sort of information to those interested in developing rules of evidence for England. If we look to Lord Nottingham's work, while Lord Keeper, he used the language of the new probability theory, specifically its conceptions of certainty, throughout his work.

⁹⁴ When looking to develop modes of evidence, legal thinkers (who were among the "gentlemen" at the Inns of Court, with the Royal Society just next door) were privy to the new conceptions of evidence coming out of Paris. For example, Boyle and Locke, described as "sophisticated laymen" by Shapiro, "felt that the rules for determining the truth in legal matters were the same as those in other areas of investigation."⁹⁵ Another example is Sir Francis Bacon,

⁹³ Pearson at 1-9

⁹⁴ Shapiro, 1983 at 179

⁹⁵ Shapiro, 1983 at 178

who was both a central figure in the of science and one of the leading lawyers of his time, eventually becoming Lord Chancellor⁹⁶. He was also explicit in his connection of his scientific and legal views. Other leading legal lights were also connected with the Royal Society, such as Sir John Hoskyns, Sir Cyril Wyche, Lord Somers, Lord Hale, and Sir Geoffrey Gilbert are all examples of those who showed keen interest in scientific as well as legal matters.⁹⁷ It is in Hale's work where the link between law and the sciences is most obvious.⁹⁸

One of the key works in this period, which was widely read in England at the time, was Hales' *The Primitive Origination of Mankind*, a work that exemplifies the scientific-legal connection.⁹⁹ It is also important to see the connection to Leibniz's work on the Continent, and that the application of probabilistic concepts to the legal system was fairly clear from the beginning of their development. Another important work, although almost one hundred years after the development of probability theory for the first time, is Sir Geoffrey Gilbert's *Law of Evidence* published in 1756. This tome begins with a discussion of the rules of probability, which are related from perceptions of individuals from fixed data. It should be noted that the old jury practice of using jurors as witnesses remained even when new conceptions of the role of

⁹⁶ Shapiro, 1983 at 168

⁹⁷ Shapiro, 1983 at 170-171

⁹⁸ Shapiro, 1983 at 172

⁹⁹ As quoted in Shapiro, 1983 at 180

evidence were starting to make inroads into the English justice system. However, by the second half of the seventeenth century, the validity of witnesses was routinely being weighted according to more formal conceptions of evidence and probability, and the notion of credibility had appeared, along with changing attitudes toward the use of oaths.¹⁰⁰

The Development of the Burden of Proof

The development of explicit burdens of proof is an interesting case-in-point because the statements of burdens of proof are explicitly probabilistic in their formulation, in that they deal with *degrees* of doubt. It seems unlikely that such statements could have developed under mediaeval conceptions of probability. They depend, in the case of a jury trial, on laymen being sufficiently familiar with probability to understand and apply such ideas, and thus seem to represent an excellent example of the sort of transfer between scientific circles and the legal community.

Up until this point, the discussion of the development of the rules of evidence has been tied to the development of probability theory in the mid-seventeenth century. The focus has also been on the intellectual undercurrents of that period, and several arguments were put forward as to why the development of this theoretical background in areas outside law prefigured the development of the modern legal notions of evidence and proof.

¹⁰⁰ Shapiro, 1983 at 181-182

Unfortunately, this entails a certain degree of oversimplification. The English law of evidence is really a development of the eighteenth century, not of the seventeenth, although some of the events that have been described seem to clearly prefigure its development.¹⁰¹ What has been described constitutes the change, in the late seventeenth century, from a conception of knowledge as necessarily true or else it is opinion. Thus, anything that incorporated the conception of doubt could not be knowledge, it must be opinion. The change that the conceptions of probability arising out of mathematical circles in Paris led to was the ability to assign degrees of doubt to a new area of human understanding, and gave us knowledge with doubt.¹⁰²

The key document in the popularization of this sort of understanding, that is the importation of ideas of probability to the law, is Locke's *An Essay Concerning Human Understanding*, published in 1690. Locke placed all human knowledge on a linear scale of probability leading from things which could reasonably be considered to be quite doubtful (mere opinion), to those we could confidently believe, to those which were "so near certainty" that they appear almost absolutely believable¹⁰³. While these ideas had been relatively esoteric in the latter half of the seventeenth century, they were intellectual

¹⁰¹ B. J. Shapiro, *"Beyond Reasonable Doubt" and "Probable Cause"* (Berkeley: University of California Press 1991) at 6-7

¹⁰² Shapiro, 1991 at 8

¹⁰³ Shapiro, 1991 at 8

commonplaces in the England of the early eighteenth century, and were applied in domains as diverse as the sciences, history, and of course the law, and indeed were quite familiar even before Locke's work appeared. Lord Hale's *Pleas of the Crown*, for example, made a clear distinction between legal and credible witnesses, that is the ability to weight the evidence of different witnesses according to a common-sense reading of their reliability (1678)¹⁰⁴. Thus, by the turn of the eighteenth century if not earlier, the conception of probability in an almost modern sense had permeated English educated society, and although it had made inroads previous to Locke, there is little doubt that the *Essay Concerning Human Understanding* was a key document in its spread.

The spread of this sort of reasoning can be seen in jury directions of the late seventeenth century, especially in the well-reported state trials of that period. After 1668, jury directions incorporated phrases such as "if you believe" and incorporated notions of satisfaction with evidence.¹⁰⁵ The concept of "satisfied conscience" after evaluation of the evidence denotes a differentiation between testimony and verdict, the verdict to be based upon inferences made from the testimony of witnesses. A satisfied conscience was obtained by examining the evidence in conjunction with the credibility of the witness giving it. This is clearly an act of intellect, not an emotional choice to

¹⁰⁴ Shapiro, 1991 at 10-12

¹⁰⁵ Shapiro, 1991 at 13

be made, and incorporated a notion that while the final decision might not be mathematically certain or capable of demonstrative certainty, it must be “very highly probable”.¹⁰⁶ This seems a very clear reflection of probability thinking.

Other scholars place the development of reasonable doubt language earlier and in different contexts, but all place it well after the initial development of probability theory. Beattie, for example, explores the fundamental change in the criminal trial that occurred in the first decades of the eighteenth century with the use of lawyers by the defense.¹⁰⁷ The right to defense counsel was granted in 1696 for misdemeanors and treason but not for felonies. Accused felons could seek the advice of lawyers but had to present their defense by themselves at trial. The victim of a felony was free to hire a lawyer to present the prosecution case. Most prosecutions were private during this period, but the use of lawyers was rather rare. The criminal trial for felonies was dominated by the judge who was usually the only person trained in the law present.¹⁰⁸

Important shifts take place in the mid-eighteenth century, in part due to the increased resort to the use of lawyers by victim prosecutors but also through judges allowing lawyers to represent defendants. The emphasis shifts from the conscience of the jurors to the doubt they might have regarding

¹⁰⁶ Shapiro, 1991 at 14, 16

¹⁰⁷ Beattie, J.M., "Scales of Justice: Defence Counsel and the English Criminal Trial in the 18th and 19th Centuries" (1991) 9 *Law and History Review*, 221

¹⁰⁸ Beattie, 1991 at 221-223

individual witnesses and the overall verdict. It is in the second half of the eighteenth century that the “reasonable doubt” language begins to appear, probably first in the Boston Massacre trials in 1770.¹⁰⁹ Beattie suggests that the notion that it was better that a guilty offender go free than to convict an innocent dated farther back, and was included in Blackstone's *Commentaries*.¹¹⁰ However, while the formulation of 'beyond a reasonable doubt' was not common, by the 1780s judges used language that suggested a presumption of innocence, and by the end of the century a clear positive presumption of innocence had been formulated.¹¹¹

While to modern ears this seems somewhat different from a “satisfied conscience” test, it elicited no contemporary comment. Indeed, such language was present in Sir Geoffrey Gilbert's *Law of Evidence*, which had already gone through several editions prior to this time. Shapiro thus contends that in the contemporary usage, there was little significant difference in these two types of instruction, that they represent merely a change in language rather than a fundamental conceptual change. Although the right to be defended by a lawyer was not extended to felonies by statute until 1836, Beattie's contention and one that seems beyond challenge, is that the presence of lawyers in larger numbers

¹⁰⁹ Shapiro, 1991 at 22

¹¹⁰ Beattie, 1991 at 248

¹¹¹ Beattie, 1991 at 249

beginning in the 1720's and 1730's wrought a dramatic change in the criminal trial during the intervening hundred years.¹¹² The law of evidence developed in the eighteenth century, at least in part, because the questioning of defense lawyers created a need for systemization and consistency in the rules governing the admissibility of witness testimony.¹¹³ As well, restrictions on the role of defense counsel led to an emphasis on the value of cross-examination as a technique for casting doubt on the factual basis of prosecution cases.¹¹⁴ Thus, while the intellectual shift caused by the development of probability theory was certainly crucial to the development of the law of evidence (Beattie cites Shapiro's work on this point), we must keep in mind that it may have been driven by the emergent lawyerly discourses and institutional developments in the eighteenth century and utilitarian changes to the legal process in the nineteenth century¹¹⁵ (developments on which Weberian influenced historians would no doubt focus).

This lends credibility (to use a probabilistic word) to the contention that the key shift in scientific thinking occurred a century earlier with the development of probability calculus in Paris in the mid-seventeenth century. We can see a progression, where this new idea at first was interesting only to

¹¹² Shapiro, 1991 at 21-23

¹¹³ Beattie, 1991 at 232-233

¹¹⁴ Beattie, 1991 at 235

¹¹⁵ Beattie, 1991 at 235-236

those few who were aware of it in the 1660's, and it spread to England through scientific circles very shortly after. By the time Locke popularized it in a form which allowed ready application to many areas of intellectual life, it had already shown up in legal circles, particularly in jury charges, and by the middle of the next century we see the use of the "beyond a reasonable doubt standard" appearing without significant comment, leading to the modern form of jury direction.

It seems clear that there are still many important pieces to this puzzle which need to be put into place. It would be interesting to study exactly how information concerning the developments in France made their way to England. It would also be interesting to look at greater depth into the case-law (such as there is) of mid-seventeenth century England from a textual-analysis perspective, to see how the use of terms changed during this period, in an attempt to ferret out exactly when and where this great change in legal understanding first made itself known. Certainly Beattie and Shapiro's work represent significant steps in this direction. Finally, it does not seem entirely convincing that the change from the phrase 'conscience' to the phrase 'beyond a reasonable doubt' does not represent a serious transformation. Rather it seems likely that the change had occurred gradually in the meaning of the term 'conscience' over the preceding fifty years, and the study of that change in itself

would make an interesting study. Beattie's analysis would seem to support that sort of analysis of the process.

It does seem to be clear, however, that if Ian Hacking is right and the development of probability theory in 1660 did represent a major change in the conception of evidential proof, then it seems that this change had an important and almost immediate impact on the legal system in England, although it took a century for its full import to be understood in the development of the reasonable doubt standard. What remains to be better understood is the precise mechanism of this transformation and the systemic and societal pressures that led to it.

Conclusions and Overview of Nineteenth Century Developments

If the law of evidence and science derive largely from a common discourse about probability, perhaps we should see science and law as being parts of the same discursive structure. The underlying commonality between the law of evidence and science lies in the very conception of evidence itself. The idea of collecting observations and then attempting to interpret them represented a fundamental break between the mediaeval and the modern mind. Truth statements about the world around us fundamentally change in form as the rules of formation switch from a mediaeval system of signs to the modern separation of evidence from conclusions. In effect we see that the invention of the objective for the technology of probability theory presupposes an objective reality that may be observed by human beings with some degree of reliability. It

is nonsensical in a modern courtroom to call on a sign from God, to a trial by ordeal. This is not a valid means of generating a true statement for it does not follow the rules of formation required to create a true statement.

This provides an explanation for why the evidence of scientific experts is acceptable while truth-claims derived from other discourses are not acceptable. One might postulate that a truth-claim that has its basis in conceptions of fact and causation, that is evidence, which is derived from the same roots, as that of the law will be acceptable. In other words, the discourse of law will accept as valid truth claims from outside discourses that use the same construction of evidence used by the law. In practice this form of attempting to understand the world around us is usually considered to be 'science,' so it may be reasonable to see that term as a placeholder for a phrase such as 'shares the law's basic construction of evidence.' Science and the law then share historical and discursive roots but it would be a mistake to view the construction of evidence in contemporary law as equivalent to that of contemporary science.

This is not to suggest that other processes, such as the professionalization of the law and the growing cosmopolitan nature of English society, were not important or indeed the crucial factors in the development of the law of evidence in England. It merely suggests that the form of proof developed in the English courts derives largely from conceptions of causality

and proof developed by the early workers in probability theory. While probability theory may not have caused the change, its development was a necessary precursor for courtroom procedure to have followed the path it did.

This analysis provides at least a partial answer to the first question posed, for it provides an historical explanation for why scientific discourse and scientific truth claims are considered as valid by legal discourse. However even if we are to assume that the legal and scientific conceptions of evidence were the same in the eighteenth century there has been ample time in the intervening three hundred for scientific and legal conceptions of evidence to drift apart. We must then ask how the modern law views scientific evidence and how the contemporary discourses of law and science interact in the legal arena.

Further Development of the Law of Evidence

Therefore, before turning to the late nineteenth and early twentieth century phenomenon of the fingerprint we must first discuss the development of the law of evidence over the intervening hundred years, for indeed it was during this period that something recognizable as the modern law of evidence was developed. This will of necessity be a very cursory examination and only attempts to highlight some of the developments that seem relevant to the study undertaken here. For example, prosecutions for most matters that appeared before the criminal courts were private and were pursued by the victim of the

crime until the nineteenth century,¹¹⁶ and it would be useful to explore that development. However this section will focus only on changes in the substantive law of evidence that occurred from the mid-eighteenth to the end of the nineteenth century.

Several themes emerge from an analysis of the historiography of this period. The first is the tremendous development of increasingly complex rules of evidence from the eighteenth century until the legislative reforms of the Victorian period. In the context of those reforms, the influence of Bentham and utilitarianism has received significant discussion. Throughout this period, the trial and the law of evidence were dominated by a strict formalism, a stark contrast from the relatively informal trials between the sixteenth and eighteenth centuries.¹¹⁷

Christopher Allen describes the period from about 1750 until 1850 as one where procedural formalities coupled with formal rules of evidence dominated the courtroom process.¹¹⁸ While counsel for either of the two sides was relatively rare during the eighteenth century (although, as discussed earlier its increasing presence was making itself felt), by the nineteenth century the court was becoming a realm of lawyers. The law of evidence became

¹¹⁶ Beattie 1986, introduction and ch. 3; Beattie, 1991 at 221

¹¹⁷ See Allen, C., *The Law of Evidence in Victorian England* (London: Cambridge University Press, 1997), introduction

¹¹⁸ Allen at 3

increasingly composed of a myriad of complex barriers throughout the nineteenth century, and Parliament began to break down the earlier barriers based on competency.¹¹⁹ The early nineteenth century was also the period when the judgements of courts were increasingly being reported by court reports and the resulting decisions systematized by the treatise writers.¹²⁰ This systematization led to a belief that the common law was not simply a series of cases; rather it was composed of underlying rules that might be learned and altered by the courts over time. Indeed, Blackstone was criticized at the time for his attempt to systematize law by reducing it to systems of rules.¹²¹ Thus, up through the mid-nineteenth century we see a law of evidence increasingly made up of complex and largely exclusionary rules governing the admissibility of particular types of testimony. However, it should be mentioned that in the criminal context the lack of a criminal appellate court in England prior to 1907 may have retarded the development of a rule-based jurisprudence of the law of evidence in the criminal context.¹²² Wide-ranging utilitarian reform of the law of evidence was advocated quite early, notably by Jeremy Bentham,¹²³ although Allen suggests that Bentham's influence was not the driving force behind the

¹¹⁹ Allen at 3-4

¹²⁰ Allen at 14

¹²¹ Allen at 16

¹²² Allen at 27

¹²³ Allen at 16-27

actual reforms to this area of law in England. Bentham's call for codification represents at the minimum a call for greater systematization of the law of evidence. While Bentham's call for codification failed, the push for greater rationalization of the law of evidence did not.

We have been discussing the development of the law of evidence in general, in a search for general patterns. What of the place of scientific opinion evidence in the nineteenth century law of evidence? In general most opinion evidence was deemed not admissible, with the exception of expert testimony. Writing in 1898 and in an American context, Thayer attacked the usual exclusion of opinion evidence because of the difficulty of separating fact from opinion. In this context, he makes the following statement

When does a matter of fact first become matter of opinion? [...] There are questions which require special training and knowledge to answer them. A jury, unless it be one of experts, and, as such, ill adapted, perhaps, for the general purposes of trials, cannot deal with them. On such questions, then, the ordinary jury may be assisted by skilled witnesses, who give their opinions.¹²⁴

This represents what would seem to be an accurate description of the case usually argued for scientific evidence, that it allows juries to receive information that they would be otherwise be unable to comprehend. However not all writers discussing expert scientific or quasi-scientific testimony have agreed that

¹²⁴ Thayer, James Bradley, *A Preliminary Treatise on Evidence at the Common Law*, (Boston: Little, Brown, and Company, 1896), reprinted (South Hackensack: Rothman Reprints, 1969) at 524

scientific testimony should be considered 'mere opinion.' The rules for scientific evidence by the early twentieth century were already reminiscent of our contemporary law, although there were significant differences. For example, Albert Osborn writing in 1926 suggested that, in the context of handwriting analysis, a 'scientific' opinion was not the same thing as an inexperienced opinion, but only if the method by which that opinion can be understood by judge and jury:

If a specialist cannot give to the friendly attorney logical reasons for a conclusion, he will not be likely to get a sudden inspiration under the restrictions surrounding the witness-stand that will enable him to present in an effective manner the basis for any opinion he gives.¹²⁵

The careful lawyer scrutinizes every step of an investigation, tests every claim and theory of client and of specialist, and especially reviews the basis of all testimony and the process of reasoning by which conclusions are reached.¹²⁶

What should be noted here is that the *methodology* of the specialist is subject to the lawyer's review, hence to legal discursive practices. The inference one draws is if the methodology is acceptable to the law and explicable to judge and jury, then the testimony of the expert witness rises above mere opinion. We will return to the contemporary law of evidence in the context of expert testimony in Chapter IV, and will find that the concerns expressed here continue to form the basis of the contemporary law of evidence where scientific evidence is

¹²⁵Osborn, Albert S., *The Problem of Proof*, 2nd Ed. (Newark: Essex Press, 1926) at 153

concerned. This sort of approach to the testimony of the expert should be kept in mind in the context of the following chapter. Indeed, as we shall see, one of the reasons for the success of fingerprinting was the ability of fingerprint experts to persuasively explain their methodology before the courts.

¹²⁸ Osborn at 154

Chapter III: The Law's Reception of Fingerprinting

While the philosophical underpinnings of the law of evidence as it developed from the eighteenth century onward appear to rest on early scientific conceptions of proof and probability, it would be wrong to consider that contemporary science and our current law of evidence remain part of the same discursive system. Law and science appear to have diverged, leading to separate discourses of truth, even if these discourses may spring from the same philosophical lineage. Perhaps it is this shared historical lineage that gives to science its special place in the twentieth century courtroom for in the contemporary law of evidence scientific truth is given a special and privileged place where scientific truth claims are accepted as true by the courts within the context of the particular scientific system within which they are made.

This chapter will seek to address how the locus of fact-finding may move away from legal discourses to scientific or technical discourses that generate legally acceptable truth-claims and how such truth-claims become legally acceptable. In doing so, it will address the interaction between legal and scientific discourses with a view to understanding how the law perceives science and what consequences the interaction between scientific and legal discourses have to the underlying structure of each of these discourses. The focus will be on what is perhaps the most comprehensive example of this sort of process. It

will focus on the adoption of fingerprinting as an irrefutable technique for identifying an individual.

There is something special about fingerprints. Somehow they have come to be equated with absolute infallibility in popular society. For example, we emphasize the effectiveness of DNA typing by comparing that technique to a much older one by calling it DNA fingerprinting.¹²⁷ It is important to keep in mind the perspective we use when discussing something like fingerprinting. The popular culture perception of fingerprints is not necessarily identical to that of the courts and courtroom perception of the effectiveness and reliability of fingerprinting as a means of identification may yet differ from that of latent fingerprint examiners or of the police who employ them. Thus, when defining a discursive formation existing around fingerprints, it is important to keep in mind the other discourses associated with the one we intend to focus on. A discussion of fingerprinting in the context of law-enforcement might be significantly different from that of lawyers and judges, for while both may represent parts of the justice system writ large, they are also distinct in the discourses they generate. These relate to finer distinctions between the process of law enforcement and the process of justice administered by courts which must at least appear to be operating independently of government. The rules of

¹²⁷ Cole, Simon A. "Witnessing Identification: Latent Fingerprinting Evidence and Expert Knowledge." *Social Studies of Science* 28.5-6 (1998): 687-712.

formation of the police-fingerprint discourse may allow the police to place significant weight on inadmissible evidence or evidence too weak to be given significant weight at trial.

It appears that there was a three-way interaction of discourses in the development of fingerprints as an effective discourse in the legal context. The North-American fingerprint expert was born a policeman and fingerprints were initially "sold" to the police as an effective identification tool. However, policemen were not a class of "experts" generally viewed by the courts as having some sort of special expertise. To make the identification of a match acceptable and essentially irrefutable in the courtroom, fingerprint examiners needed to create a technical science out of their field. The aspect noted by Cole, that is the essential irrefutability of fingerprints in the context of a match, is certainly an important part of it.¹²⁸ However, it also includes a very important separation between the fingerprint expert and the police force from which the expert was spawned.

The development of fingerprinting in Canada illustrates what appear to be two important aspects involved in the exportation of the locus of fact-finding to a scientific or quasi-scientific discourse.

¹²⁸ Cole at 687-712.

Police History – Placing Fingerprinting in Context

The development of fingerprinting has to be seen in the context of the development of English-style policing, a development that has been alluded to in the previous chapter. Fingerprinting, as this chapter will demonstrate, seems more closely tied to police discourses than to scientific or legal discourses in the courtroom context. There is a vast literature on the development of English and imperial police forces,¹²⁹ and no attempt is made here to properly survey that literature. Rather, the attempt is simply to provide some context prior to turning to the discussion of fingerprinting proper.

Perhaps the most surprising thing about the development of professional policing in England is how late it occurred and for how long English society retained an almost mediaeval model of policing. It is from the beginning of the time-period under discussion here that a system of urban policing began to develop in England. The City of London maintained an organized watch without powers of arrest. Law enforcement outside the City, including what became known as Metropolitan London, was maintained by a rural system of rudimentary public law enforcement. The traditional system, one that had been in place in both Tudor and Stuart times, was based upon the institution of the justice of the peace and the parish constable. The justice of

¹²⁹ An excellent introduction to this literature is provided in Senior, Hereward, *Constabulary: The rise of Police Institutions in Britain, the Commonwealth and the United States* (Toronto: Dundurn Press, 1997), which is the basis of most of the following discussion of police history.

the peace (or magistrate) was a position of considerable authority as such officers tried minor crimes, and they supervised the constables and the watch. The office of the parish constable was an office largely without reward and was therefore something to be avoided. Upon Cromwell's victory in the Civil War of the 1640's, the traditional system broke down and the Puritan forces maintained an authoritarian order. It is perhaps from this period that the English fear of professional police received its impetus. The system of magistrate and parish constable was reestablished when Charles II regained the throne in 1658.¹³⁰

In Metropolitan London, this system was clearly inadequate and indeed it had evolved into a highly corrupt system dominated by thief-takers, essentially bounty hunters, and trading magistrates who made their livings by minor acts of corruption. In response to the inability of this system to respond to two essentially urban problems, the increase in property crime, and the need to resort to the military to control riots, a truly professional discourse of policing in England developed during the eighteenth and nineteenth centuries and with it the institutions of a professional police force.

The development of the technology of policing is usually associated with the Fielding brothers. Henry Fielding was appointed as presiding magistrate at the Bow Street Court in 1748, and as a noted playwright,

¹³⁰ Senior at 19-20

pamphleteer, and columnist he propagandized for the need for a professional system of police. From Bow Street he operated the first attempt at quasi-professional policing with his Bow Street Runners, a group of thief-takers who benefited from legal education. More importantly for the purposes of this discussion, he instituted a highly detailed system of record keeping and published the first English statistics on crime rates.¹³¹ In 1785 the Middlesex Justices Act created a system of stipendiary magistrates and paid constables modeled on Bow Street and funded directly from the Home Office.¹³² At the turn of the nineteenth century, Patrick Colquhoun published his *Treatise on the Police of the Metropolis*, which dealt with crime statistics, the causes of crime, and the systemization of policing.¹³³ Thus by the early nineteenth century we can see the emergence of a truly professional police discourse, one that dealt with crime as a knowable phenomenon and proposed a distinct organizational technology to combat it. The development of a professional police force in London dates to 1829 where, at the impetus of Home Secretary Robert Peel, the London Metropolitan Police force was established with a quasi-military organizational structure finally separate from the magistrate's courts.¹³⁴ While a full description of the development of the London Metropolitan Police falls

¹³¹ Senior at 25-27

¹³² Senior at 30

¹³³ Senior at 31

¹³⁴ Senior at 33-35

outside the ambit of this thesis, it should be noted that by 1842 the rank of detective was created, thus creating the first group of men dedicated to the collection of criminal intelligence and the solving of crimes.¹³⁵ The Criminal Investigation Department (CID) was established in 1878 and became responsible for the solving of 'non-political' crimes.¹³⁶ The rise of professional policing thus corresponds with the rise of public prosecutions, as discussed in the previous chapter.

Space prevents a discussion of the alternative models of policing developed elsewhere during this period, such as the Royal Irish Constabulary, an organization Peel was instrumental in founding prior to his involvement in policing within metropolitan London.¹³⁷ As the development of fingerprinting in Canada was modeled on CID, which will be demonstrated in this chapter, it seems worthwhile to make a couple of observations about the London Metropolitan Police Force before moving to fingerprinting in Canada. First, the development of a centralized professional police force occupied a period of almost two hundred years, and by the end of the nineteenth century it was still a relatively new development. Second, one of the fundamental technologies tied to the development of a police technology and a police discourse was record

¹³⁵ Senior at 36

¹³⁶ Senior at 43

¹³⁷ see Senior at 77-98

keeping, and it represents one of the earliest developments in the rise of the English police model. Third, there was significant influence by developments in colonial policing upon the development of the London police, as exemplified by Peel's earlier and contemporaneous involvement in the development of policing in Ireland. Finally, the police discourse that developed was international, with, for example, the writings of Patrick Colquhoun having impact upon the development of policing in New York.¹³⁸ All these factors are significant in the development of fingerprinting in Canada.

*The History of Fingerprinting in Canada – An Overview*¹³⁹

Fingerprinting is one of a number of techniques developed using body measurements to attempt to identify and classify human beings. In the nineteenth century a variety of techniques were not used to identify individuals but to attempt to make statements about their intelligence or propensity for criminality. These attempts were well supported by the scientists of their day,

¹³⁸ Senior at 50

¹³⁹ Although there has been relatively little rigorous and unbiased historical work done on the development and adoption of fingerprinting in Canada, the basic history is well documented. However, as with much of this sort of history, the concentration has often been on tracing the involvement of specific individuals in the adoption of particular institutional structures necessary for the use of fingerprint technique. Primary historical sources consist primarily of archival correspondence available at the National Archives of Canada. Included in the papers available there is a marvelous collection of papers, including personal scrapbooks and memorabilia, of Inspector Foster. The secondary sources, often based on the same archival material used for this study, are used to establish chronologies and the key actors. Most of the observations as to the sort of discursive formations observable in the historical record will refer directly to the archival sources.

but did not achieve great acceptance in the courts.¹⁴⁰ Fingerprinting as a technique may date back a thousand years in China, but its acceptance in western scientific circles ultimately depended upon the patronage of Galton, the cousin of Charles Darwin and himself one of the most famous scientists of his day. Galton developed a method for the classification of fingerprints, and it was Edward Henry who first implemented his system in India in the 1890s.¹⁴¹ Henry published his system in 1900 and it became known as the Henry system, and it was first used by the London CID in 1901.¹⁴²

Fingerprinting was originally brought to Canada as an alternative for another anthropometric technique, that of Bertillonage. Anthropometric methods of identification use measurements of the body to generate searchable indexes and allow the linking of an individual with his or her criminal record. While fingerprinting uses the unique ridges formed on the fingertips as the physical characteristics for measurement and classification, Bertillonage used a variety of bodily measurements taken using special calipers. Bertillonage was time-consuming and required relatively highly trained personnel to perform the measurements, whereas fingerprinting was logistically simpler although highly trained personnel were required to classify and match fingerprints.

¹⁴⁰ See the discussion of Lombroso in Gould, Stephen J., *The Mismeasure of Man*, (New York: Norton, 1981) at 113-145

¹⁴¹ Brownhill, H. E., "50 Years of Fingerprinting" (1961) 26(3) RCMP Quarterly 155

¹⁴² Brownhill

In the early twentieth century both systems competed for pride of place in North American police forces. The Bertillon system was older and had already been implemented at Kingston Penitentiary and in several states. Cost and the general difficulty of the technique were perceived as serious impediments to its general use. While fingerprinting was first used in India in the late nineteenth century and had already been implemented with significant organizational genius at Scotland Yard by the turn of the century, it did not make its way to North America until the 1904 St. Louis World's Fair.¹⁴³

This is not to say that Canadian police forces were unaware of the technique or were uninterested in its practice. For example, in 1898 A. P. Sherwood, then Commissioner of the Dominion Police on a trip to London, requested that Lord Strathcona the High Commissioner for Canada request that a copy of the Henry System be forwarded to him from the British Foreign Office, and it appears that this request was probably fulfilled.¹⁴⁴ Thus, approximately one year after the Henry Report was published by the Indian Government, Canadian police forces were not only aware of its existence but were also sufficiently interested to request a copy.

The implementation of fingerprinting in Canada is generally held to be primarily the result of the work of one man, Edward Foster, who was also

¹⁴³ Foster, Edward, "Speech," National Archives of Canada, RG 18 Vol.1997-98, 1912

instrumental in the transfer of fingerprint technology from Great Britain to the United States. The story is generally told as follows: Foster, at that time a constable in the Dominion Police, first learned of fingerprinting techniques from Detective Ferrier of Scotland Yard at the St. Louis World's Fair in 1904. He then proceeded to lobby, with the backing of others, for the establishment of a fingerprint bureau in Ottawa and the general use of fingerprints in Canada.¹⁴⁵ In 1908 an Order in Council was passed sanctioning the use of the fingerprint system under the Identification of Criminals Act, following a controversy about an inmate who escaped from Kingston Penitentiary in 1910 whose capture would have been aided by fingerprinting. Following this, the Bertillon system was abandoned and by 1911 the Canadian Criminal Identification Bureau was set up in Ottawa.¹⁴⁶ After the war, fingerprinting spread to most police departments in Canada, starting gradually but accelerating as the merits of the system were appreciated.¹⁴⁷

In what was probably the first case where a fingerprint was used to obtain a conviction, Thomas Jennings was tried for murder in Chicago in 1911. Fingerprints were found to be admissible at trial and the evidence of a variety of

¹⁴⁴ Lucas, C.P., "Letter to the Colonial Office," National Archives of Canada, RG 25 Vol. 103, 1898; Sherwood, A.P., "Letter to Lord Strathcona" National Archives of Canada, RG 25 Vol. 103, 1898

¹⁴⁵ Brownhill at 155-167; Campbell, Marjorie Freeman. *A Century of Crime: The Development of Crime Detection Methods in Canada*. (Toronto: McClelland and Stewart, 1970); Foster, 1912.

¹⁴⁶ Marquis, Greg. *Policing Canada's Century: A History of the Canadian Association of Chiefs of Police*. (Toronto: University of Toronto Press, 1993).

fingerprint experts, all trained by Ferrier at the 1904 World's Fair, was accepted.¹⁴⁸ However, the first Canadian case where fingerprints were determinative did not occur until 1926.¹⁴⁹

This appears to be the fairly simple adoption of a new and better technique of anthropometric identification, but in several fundamental ways fingerprinting represented a dramatic departure from earlier techniques. First, its relatively simplicity and cost-effectiveness allowed its far wider implementation as a surveillance and record keeping technique. Second, unlike Bertillonage it could be used to implicate individuals in criminal activities, and it is therefore also an investigative technique. The interaction between these two facets of fingerprinting is fundamental to understanding the adoption of fingerprinting by the police and its subsequent use in the courts. Since fingerprinting was first used as a replacement for older anthropometric techniques, its record keeping nature will be discussed first before turning to its investigative and subsequent courtroom use.

Fingerprints as a Form of Record Keeping

Until fingerprinting emerged as the dominant system of identification, the *Identification of Criminals Act* of 1898 enabled the use of the Bertillon method of identification, one that was widely adopted during the late nineteenth century

¹⁴⁷ Marquis.

¹⁴⁸ Marquis; Cole at 687-712

and based on a variety of body measurements.¹⁵⁰ Indeed, in 1896 and 1887 Commissioner Sherwood had been one of the leading voices asking for the implementation of such a system in Canada, prior to his support for the use of fingerprinting.¹⁵¹ This is the same Commissioner Sherwood who the next year requested a copy of the report on the Henry system.¹⁵² Furthermore, the problem of the identification of criminals¹⁵³ had, whether through description, photographs, or anthropometric means, been at the heart of British-style policing dating back at least to the development of the London Metropolitan Police.¹⁵⁴ For example, in extradition cases the major problem until the implementation of widespread fingerprinting of suspects was generally identifying that the individual involved was in fact the person subject to extradition.¹⁵⁵ The need to identify criminals lay at the heart of what turn of the century police officers considered to be their profession. Once the validity of identification methods such as the Bertillon method became accepted,

¹⁴⁹ Campbell

¹⁵⁰ Marquis

¹⁵¹ Marquis

¹⁵² Sherwood

¹⁵³ The term 'criminal' is used with advisement, for it represents the language of the Act and of the sources used in this thesis. Strictly speaking then, as today, people charged with crimes could be fingerprinted, and the 'criminals' subsequently identified would be those with an existing criminal record or conviction.

¹⁵⁴ Pimrose, "Correspondence re. the identification of criminals." National Archives of Canada, RG 18 Vol. 359, 1908.

¹⁵⁵ Pimrose, Brownhill

fingerprinting became merely another weapon in the police armory. It is therefore important to see the innovations learned and promulgated by Foster and his contemporaries not as the implementation of a completely new concept, but as the extension of the concepts of record-keeping and identification, concepts that lie at the foundation of modern policing.

Interest in the use of fingerprinting in Canada predates the twentieth century. In 1896 the Deputy Minister of Justice responded to an enquiry as to whether fingerprinting had been adopted in Canada by stating that " the system has not be adopted in any of the [prisons, correcting provinces] under the control of the Government of Canada."¹⁵⁶ However, just two years later A. P. Sherwood, then Commissioner of the Dominion Police, requested a copy of the report on Mr. Henry's system of fingerprinting:

I am here in my official capacity, enquiring into the system in vogue at Scotland Yard for the identification of criminals, with a view to inaugurating in the Dominion the best and most up to date method, and have been informed by the assistant Commissioner of the Criminal Investigation Department, that it would greatly help me if I could procure a copy of a report to the Indian Government on Mr Henry's Henry's [sic] system now in operation there. The report is dated about a year ago and a copy was received by Scotland Yard from the Home Office quite recently. I would therefore pray Your Lordship to do what is in your power to obtain this for me.¹⁵⁷

¹⁵⁶ Newcombe, Deputy Minister of Justice, "letter to J.G. Colmer, esq.," National Archives of Canada, RG 25 Vol. 103, 1896

¹⁵⁷ Sherwood, 1898.

Although no copy of the report appears in this particular file, given that the response to this enquiry was positive¹⁵⁸ it appears that as early as 1898, at least as far as the Dominion Police were concerned, there was fairly complete knowledge of the Henry system of fingerprinting in Canada.

However, at least from the point of view of police discourse it is arguable that the acceptance of one anthropometric methodology increased the chances of the acceptance of a later anthropometric technology. Underlying this is the assumption that the logical framework of all anthropometric techniques is similar. There is also evidence that fingerprints were not at first seen as an entirely novel technique but rather as a more efficient replacement for Bertillonage.¹⁵⁹

Now if you will bear with me for a short time, I propose telling you about your Bureau, which has been placed in my charge by the Chief Commissioner. I am a pupil of Scotland Yard, having learned the finger print system from one of their experts during the Worlds Fair at St. Louis, MO. In 1904. In the following year I was sent to the New York State Prison Department, where I learned the Bertillon system. On my return I reported strongly in favor of the finger print system, for, as a means of identification, it is head and shoulders above the Bertillon.¹⁶⁰

We therefore are faced with a dilemma. If, as has been suggested, fingerprinting merely represented a more efficient solution to the problem of

¹⁵⁸ Lucas, C.P., "Letter to the Colonial Office," National Archives of Canada, RG 25 Vol. 103, 1898

¹⁵⁹ Marquis

¹⁶⁰ Foster

identification of criminals, a problem already solved at least to some extent by the Bertillonage system of anthropomorphic measurement, then we might expect the rapid adoption of this new technique. Instead, the amendment to the Identification of Criminals Act that allowed the taking of fingerprints did not occur until July 21, 1908 when an Order in Council was passed allowing the taking of fingerprints under the *Identification of Criminals Act*.¹⁶¹ During this period that the Bertillon system remained the premier choice for anthropometric identification and at first it seemed to out-compete the newer technique of fingerprinting.

Perhaps Bertillonage persevered for the same reasons for which fingerprinting eventually superseded it, because it required more technical expertise to implement and involved the purchase of relatively expensive equipment.¹⁶² It is not hard to imagine that bureaucratic intransigence would provide an adequate explanation for the delay in the implementation of fingerprinting as an identification technique. Perhaps as well the way in which fingerprinting was "sold" may also be partly responsible for the delay in its implementation. Looking through the early correspondence relating to fingerprinting in Canada, one senses that even the early proponents of fingerprinting saw it primarily as a replacement for Bertillonage in the

¹⁶¹ Brownhill at 155-167

¹⁶² Marquis

identification of criminals, not as a revolutionary crime-solving technique. For example, as late as 1905 Foster was sent to Albany New York to study the Bertillon system,¹⁶³ indicating that even this late Bertillonage was seen as a reasonable competitor to fingerprinting. The equation of fingerprinting and Bertillonage that this seems to represent is only reasonable if the criminal identification aspect of fingerprinting was recognized or if that was the aspect of the technique emphasized by early proponents.

However, fingerprinting is *not* similar to Bertillonage in one key respect. The Bertillon system was based upon the accurate measurements of a variety of parts of the human body, measurements that could be achieved either directly or through expert photography. Since criminals are extremely unlikely to leave such measurements at a crime scene, the Bertillon system in no way permits the linking of a suspect to a crime. It performs another task, and one that has been traditionally seen as important in police work. It allows the linking of a suspect to previous crimes. It allows the matching of a criminal record to an individual based upon physiological characteristics that he or she cannot change. There is little evidence that Bertillonage was used at trial in Canada, but that was not its purpose.¹⁶⁴ The purpose of that technique was social control in the sense that it

¹⁶³ Brownhill, H. E. "50 Years of Fingerprinting." *RCMP Quarterly* 26.3 (1961): 155-167.

¹⁶⁴ Marquis

allowed the police to keep track of criminals and ensure that their pasts would catch up with them.

Fingerprint identification incorporates two types of technologies that are complementary but fundamentally different. The first sort of technology is that of basic identification and record keeping. It is here where the similarity between fingerprinting and the Bertillon method is strongest. In this situation, fingerprints taken at some earlier time allow the identification of an individual already in custody. The key technologies involved here lie in record keeping, that is in devising an indexing system allowing a match to be made. The second technology associated with fingerprint is the ability to detect latent prints at a crime-scene. This technology is obviously fundamentally different from anything available through the Bertillon system or any other previous anthropometric identification system. Obviously, the development of a latent print is pointless without a means to match it to an existing or subsequently obtained fingerprint card, and therefore the use of latent prints is inherently dependent upon the development of the record keeping end of the equation.

The record keeping nature of fingerprinting is especially evident in descriptions of the fingerprint bureau established at Scotland Yard. Staff Sergeant Christin Jungel, sent by the Royal North-West Mounted Police to inquire into the system at use in Scotland Yard, reported extensively on the system used to classify and match prints while in London in 1906 to escort a

prisoner back to Canada. Sergeant Jungel discussed at length the filing and matching system used by Scotland Yard in a report to the Commissioner of the RNWMP. Several aspects of this report are notable. First, it concentrates almost exclusively on the operational details of the record keeping system required to establish a finger print bureau:

At the bureau at New Scotland Yard, two inspectors, with a staff of assistants, are employed registering and classifying the numerous prints coming in from all parts of the United Kingdom every day. The reading of the finger prints, and the drawing out of the ten fingers of a certain form through the primary classification and sub-sub classification, using arches, tented arches, composites, radial and ulnar loops, and counting the ridges in the different fingers to determine whether inters or outers etc, etc is always done by two, so that no mistakes are possible. A certain form something of this style [...] is drawn out of every person's finger print, which form, if the man's finger print is on file, is bound to be found, even if the man has ever so many aliases, and which owing to the simple system of filing away those finger prints in accordance with figures, contained in forms drawn out of them, can be located in a few seconds, even amongst the ninety thousand finger prints they now have on file at New Scotland Yard;- if the form is there the prints are compared, and of course always found to be identical, although the name may be different. The particulars contained in the finger print form vis:- date of previous conviction, sentence, etc. are at once, returned to the officials sending in the prints for classification. In case the finger print or rather the form drawn out of it is not found, the form next to, or after the one wanted is tried, but if found not to correspond with the one sent in, word is sent back that there is no record of this man being previously convicted or arrested.¹⁶⁵

¹⁶⁵ Jungel, Christin, "Letter to the Commissioner, RNWMP," National Archives of Canada, RG 18 Vol. 1997-98/386, 1906.

This description, part of a detailed description of the operational details of the fingerprint bureau at Scotland Yard, provides some of the flavor of this report. Jungel's report also included the observation that if such a scheme were to be implemented in Canada "it must be on exactly the same lines, in every detail, as at Scotland Yard."¹⁶⁶ This report was forwarded to the Comptroller of the RNWMP, eliciting the following response:

Referring to your letter of the 15th inst., respecting the adoption of the Finger Print System for the identification of criminals.

This is a subject which has occupied the attention of the Commissioner of the Dominion Police [Sherwood?] and the Department of Justice for some time past. It has been discussed on more than one occasion at meetings of Wardens of Penitentiaries held at the Dept. of Justice, and I am informed that the Department could at any moment secure the services of an expert of the highest order in connection with the system.

I do not think that we would be justified in incurring the expense of sending a member of the Police Force to England pending a decision on the contemplated adoption of the system for the whole of Canada.¹⁶⁷

As of 1906, then, not only were the federal police forces aware of the possibilities and requirements for implementing a fingerprinting system in Canada, they had already rejected such a system because of the expense involved. It also appears that Jungel himself, given that this response was forwarded to him, was quite interested in spending a month in London learning the art of fingerprinting as practiced at Scotland Yard.

¹⁶⁶ Jungel

¹⁶⁷ RNWMP, Comptroller, "Letter," National Archives of Canada, RG 18 Vol. 1997-98/386, 1906.

Jungel also recognized the dual nature of fingerprinting. "There are two branches of the system, viz:- the registration and classification of criminals, and the actual detection of crime by fingerprint, although both are analogous."¹⁶⁸ He recognized that the detection of crime through the use of fingerprints was dependent upon the existence of a database of fingerprints: "I think I am safe in saying, that many *prima facie* cases would have been established in the past through reproduction and classification of fingerprints found on objects, had the system been in vogue."¹⁶⁹ Jungel thus clearly makes the point that if the RNWMP wished to take advantage of fingerprinting for use as evidence at court or as an aid in the detection of crime it must first establish the sort of institution then existent at Scotland Yard. Without the record keeping establishment behind it, fingerprinting was not a particularly useful technique. The record keeping side of fingerprinting might be best seen as a method of surveillance used by the police rather than as method of crime detection. This can best be seen by some of the proposals for the use of fingerprinting in areas outside the area of crime and criminals. It was proposed that fingerprints be used on passports,¹⁷⁰ for Chinese immigrants, and for depositors at Post Office

¹⁶⁸ Jungel

¹⁶⁹ Jungel

¹⁷⁰ Stames, Cortlandt., "Letter," National Archives of Canada, RG 25 Vol. 1480, 1927.

Banks.¹⁷¹ The major problem with the use of fingerprinting in these contexts appears to have been its association with criminality. For example, the Post Office Bank rejected the possible use of fingerprints for the following reasons:

- (a) In operation it would raise in many persons' minds the thought that there was a stigma of criminality about the procedure; such methods being widely associated in the popular mind with detective work.
- (b) It would be messy and smeary of persons and papers under almost any conceivable circumstances, as there would be prints required of three fingers, and several impressions of the group from an inked pad upon the papers and passbook.¹⁷²

Fingerprints and fingerprinting became associated with "detective work" in the popular imagination. Indeed, looking through Foster's scrapbook of newspaper clippings dating back to early in the century the equation of fingerprinting with police work seems a constant.¹⁷³

This all begs the question, of course, of why and how a particular claim of a "match" became an acceptable truth claim. If fingerprinting represents another form of record keeping and police forces are primed to accept new methods of record keeping, perhaps it was accepted simply because it was a more convenient method to use when compared to the alternatives.¹⁷⁴ It is

¹⁷¹ Fairweather, J. H., "Correspondence re. the use of fingerprints in Post Office Banks," National Archives of Canada, RG 3 Vol. 648, 1922.

¹⁷² Fairweather

¹⁷³ Foster, Edward, "Personal scrapbook of clippings from Foster's career," National Archives of Canada, RG 18 Vol. 1997-1998

¹⁷⁴ "Bertillonage was slow and expensive compared to fingerprinting. The latter required only paper, printer's ink, a rubber roller, and a glass or polished metal plate." Marquis

always unwise to underestimate the bureaucratic impulse toward ease of implementation, but another element was crucial to the move away from Bertillonage and toward fingerprinting. This element was the perceived infallibility of identification by fingerprints.¹⁷⁵

It therefore seems that fingerprinting fits within the already existing discourse of policing at least to the extent that it represented a solution to an already-identified problem. The methodology of this thesis is archaeological, therefore the aim is not only to show the existence of earlier policing concerns but also to draw attention to the features and value structures inherent in different discourses. The sort of discourse surrounding the early proposal and adoption of fingerprinting was a police as opposed to a legal discourse. By looking to the archival record, we may identify the common elements present in the sort of language used to describe fingerprinting in the early part of the twentieth century. As it has been evident from the excerpts surveyed above, the early discourse surrounding the use of fingerprinting in Canada was primarily a discourse of record keeping and the surveillance of criminals or other undesirables, to use the language of the time. Very little mention was made of the potential use of fingerprinting in the courtroom, although such a use was foreseen.

¹⁷⁵ Marquis; Jungel

The identification of fingerprinting with the earlier technique of Bertillonage seems to indicate that fingerprinting fit within an existing police discourse, that the discursive formation developed around fingerprinting was, at least at first, a police discourse concerned not with the solving of crime but with keeping track of criminals. Seen in this context, fingerprinting was not a revolutionary technique, although it was operationally simpler and less costly to implement than that of Bertillonage. The recognition on the part of early fingerprinting proponents such as Jungel of both the crime-solving and criminal identification aspects of fingerprinting may suggest that the placement of fingerprinting within the existing discourse of criminal identification was intentional.

Despite this obvious distinction between fingerprinting as compared to the earlier identification technologies there seems little problem explaining the acceptance of fingerprinting as a viable technique by Canadian police forces. Police forces are record keeping institutions and to at least some degree fingerprints represented merely a more efficient means of record keeping. Earlier acceptance of identification based upon bodily measurements, specifically of the Bertillon technique, may have primed police forces to be amenable to the concept of individual identification through anthropometric measurement. However, fingerprinting allowed the additional advantage of

latent print identification and it is because of this aspect of fingerprinting that it began to interact with the legal system.

Fingerprint Examiners as Arbiters of Truth

While the Bertillon system may have represented the pinnacle of technology in 1890, there is remarkably little evidence of its effective use in the courts. A search of the Canadian Criminal Cases report series¹⁷⁶, a series of reports that begins in 1898, contains no mention of any use of the Bertillon system in the courtroom. There is also a significant lag between the initial acceptance of fingerprinting by the police around the turn of the century, the implementation of fingerprinting on any significant scale, and the first court decisions where fingerprints played a role. Foster was converted to fingerprinting in 1904, by which point Scotland Yard had been using the Henry System for three years and its use as an investigative technique was already underway in England.¹⁷⁷ Fingerprinting under the *Identification of Criminals Act* was not permitted until 1908. This seems to be a fairly quick acceptance of a novel technique by police forces and government, although it should be remembered that the first Canadian case where fingerprints were determinative did not occur until 1926.¹⁷⁸ What we need to explain is the lag between police

¹⁷⁶ Quicklaw, C.C.C. database

¹⁷⁷ Marquis

¹⁷⁸ Campbell

acceptance of fingerprinting as a useful criminal investigation technique and its appearance and subsequent acceptance by Canadian courts.

One explanation may have to do with the tendency of criminals to confess once their identities became known. Foster cited the following example from a letter he received from a police chief in 1912 who was able to close a case due to fingerprint identification:

I beg to advise you that the above mentioned came before our Country Judge Hnycke today, and was sentenced to five years in Kingston Penitentiary. After he found that I had his record, he pleaded guilty. I assure you Sir, I am thankful to you for the interest you have taken in this case, and for forwarding me the record, which was of great importance. This adds one more proof of the importance of every department using finger prints in connection with their work.¹⁷⁹

This indicates the enormous prestige associated with fingerprinting, a mystique that caused even this person to confess. However, certainly not all people identified through the use of fingerprints would be as credulous as this individual, and this sort of reaction cannot fully explain the lag that ensued between the adoption of fingerprinting by police forces and its appearance at trial.

This of course assumes that this lag is unusual. Our view of the rapidity with which scientific techniques for knowledge generation become aids to courtroom fact-finding may be teleologically distorted by the astonishing

¹⁷⁹ Foster

rapidity with which such techniques are developed and achieve acceptance today.¹⁸⁰ Compared with the hundred years or so required for probabilistic methods to become entrenched in the law of evidence as described in the previous chapter, the 28 years required for fingerprints to reach the mainstream in the Canadian legal system seems remarkably fast. If Bertillonage and fingerprinting are conceptually equivalent systems, this allows the "emergence" date for anthropometric technology to be pushed back to mid-century if not earlier, suggesting that several generations of professionals, whether lawyers and judges or policemen are required before a new knowledge-generation technique becomes generally acceptable. From this point of view, the relatively rapid acceptance of DNA typing by the police and subsequently by the courts seems to stand out in sharp contrast to the generational time-frames required for the acceptance of earlier techniques.

The solution to this dilemma is to look at the acceptance of fingerprinting by the courts not as the acceptance of a singular new technology to identify criminals. Rather, it represents the development of a legal discourse that allows the courts to accept certain kinds of expert testimony as subject to criticism only within its own discourse. What this means is that a fingerprint examiner can only be criticized by another fingerprint examiner or through the use of a fingerprint examiner's discourse. Other forms of criticism, for example

¹⁸⁰ Cole at 687-712.

the common sense judgement of judge and jury, were marginalized. Effectively we see the movement of fingerprint evidence from a match directly visible to judge and jury to evidence interpreted by the opinion of an expert to, by 1935:

Counsel for the accused rely upon two cases. In *R. v. Wiswell*, [1935] 1 D.L.R. 62, 63 Can. C.C. 94, 8 M.P.R. 317, it was held that where fingerprint evidence alone was given by the Crown that it was at best opinion evidence. Mr. Justice Mellish said (p. 625 D.L.R., p. 95 Can. C.C.): "It may well be doubted whether even if the finger prints were reasonably shown to be those of the prisoner he could be found beyond all reasonable doubt to have been the suspected burglar." [page81] Well, that is a question for the jury: "But that question in my view need not be determined ..." so he did not determine that at all "because the evidence before us does not show nor even purport to show that the fingerprints on the glass were those of the prisoner". Then he goes on: "Identification by fingerprints is at best opinion evidence based I think on expert knowledge and expert practice and with due respect I cannot find that this basis has been adequately established."¹⁸¹

How did it become possible for the evidence of a fingerprint match to become based upon the opinion of a fingerprint examiner, an examiner with expert knowledge and based upon expert practice? We can see from the above quotation that even as late as 1935 Canadian courts expressed some doubts as to how convincing a fingerprint match really was.

This is the second side of the fingerprint equation. Once the Fingerprint Bureau had become established (with Foster as its head) fingerprints could now be used in the courtroom. A latent fingerprint could be

¹⁸¹ *R. v. Buckingham and Vickers* (1943), 86 C.C.C. 76

taken from a crime-scene and matched with fingerprints taken from a suspect or with records already on file. Those taking fingerprints were convinced of the infallibility of their method of identification. What was required was to convince the court. The phrase "expert knowledge and expert practice" in the excerpt quoted above seems very close to a description of a discursive formation that generates consistent truth claims. True, such claims are received by the court as opinion evidence, but as will be discussed in the next chapter, so is all scientific testimony. The question of how fingerprinting reached the point where the truth claims asserted by fingerprint experts became acceptable in the court is thus changed. The new question asks how fingerprint examiners created a discourse capable of convincing courts that their opinions were both better than those of laymen such as the judge and jury and provided truth claims acceptable to the courts.

Simon Cole has explored this issue in some depth.¹⁸² Cole noted the great degree of deference that courts seemed to allow latent fingerprint examiners during proceedings. He traced this degree of deference to the historical development of the latent fingerprint examiner as a professional. Fingerprint examiners, according to Cole, developed three key techniques for dealing with the courts that were crucial in establishing their position in the courtroom. First, they maintained professional jurisdiction over fingerprint

evidence all the while asserting that the evidence was "speaking for itself." Second, they developed rules of practice that led to near, if not total, unanimity in reaching conclusions about fingerprints. Third, they attributed any failure at achieving unanimity to malpractice on the part of the individual fingerprint examiner rather than to flaws in the methodology used by fingerprint examiners in general. Perhaps one further element can be added to Cole's analysis, the aura and practices of a technical science permeated the sort of discourse used by the fingerprint examiner.

What is crucial is how the courtroom discourse of the fingerprint examiner was built. It is not a discourse driven by police need in the sense that the sort of record-keeping discourse discussed in the previous section was. Rather, it is a discourse driven by the needs and expectations of court procedure:

...LFPEs [latent fingerprint examiners] built the science of fingerprint identification around the imperatives of courtroom testimony, constructing a science which encouraged unanimity of opinion and consistency between practitioners. LFPEs devised an ethic of shared vision in which all practitioners say the same thing.¹⁸³

Only when fingerprints begin to be used on any scale in the courtroom do the requirements of legal proceedings begin to shape the field. By understanding the way fingerprinting was adapted to the court we can therefore begin to

¹⁸² Cole at 710.

understand something important about the way courts enable outside scientific or technical discourses to make valid truth claims during legal proceedings. Fingerprints were sold to the courts, as they were sold to the police, by convincing the legal establishment of the validity, reliability, and necessity of the techniques developed by fingerprint examiners to legal decision making.

Salesmanship and the Mediating Discourse of Fingerprint Examiners

The act of salesmanship involved should not be seen simply as the fingerprint examiners convincing the courts of the validity of their techniques. The discourse of fingerprinting was not a pre-packaged product sitting on a store shelf. Discourses are highly malleable structures and if it the truth statements made by the discourse of fingerprinting had to be somehow modified to be accepted by legal discourse, then the techniques of fingerprinting had to be modified to meet the needs of the legal system. The salesperson can order his or her discursive product in a variety of colors and styles to meet the needs of the client discourse. Legal hegemony has some bearing on the development of the techniques of the latent fingerprint examiner, since for the courts to completely reject scientific claims requires a rejection of the shared discourses of evidence and probability common to the law and science. Thus, while the fingerprint salesperson may be forced to modify his or her product to meet the demands of legal discourse, the courts

¹⁸³ Cole at 687-712.

also may be convinced to accept a product not entirely to their liking. In other words, the discourses of the law and those of scientific experts interact and through this interaction gradually modify the expectations of each other.

Fingerprint examiners therefore produce what might be termed a *mediating discourse*. Latent fingerprint examiners must make statements that are both scientifically and legally true, and the act of salesmanship might be seen as describing the process by which a discourse was developed that was acceptable in both contexts. However, fingerprint examiners also had to develop a discourse, and sell it, to the police as well as the courts. Thus, the latent fingerprint examiner had to develop a technology that allowed the making of true statements in both scientific and legal contexts while doing so in a manner that helped the police to solve crimes. The discourse of fingerprinting exists at the intersection of the discourses of policing, science, and the law and operates to mediate their interactions where identification of individuals is at issue. The concept of mediating discourses will be discussed more fully in theoretical context in the conclusion to this thesis.

One further observation needs to be made. This is that the acceptance of the opinion of a fingerprint examiner represents a movement of the discursive locus of truth determination. This is illustrated in the way in which fingerprint examiners presented their evidence to the courts. Latent fingerprint examiners often present slides comparing a fingerprint taken from the crime

scene to that on a fingerprint card. These charts are marked with points of identification, points not necessarily visible to judge or jury but which still allow these images to "merge in the jury's eyes into one, a unity which has one and only one observable source."¹⁸⁴ The fingerprint examiner thus performs a sort of sleight-of-hand, for although neither judge nor jury can actually see that the two prints match, the slides create the illusion that, aided, they can interpret the evidence presented before them directly, an effect Cole describes as the fingerprints "speaking for themselves."¹⁸⁵ These charts are in their own way nothing more than a tool used to convince judge and jury of the validity of the evidence for it is not the charts themselves that are the key piece of evidence. The crucial evidence is rather the opinion of the fingerprint examiner and it is his or her testimony that is presented to the court. The charts merely create the illusion that it is the fingerprints themselves that are in evidence. Indeed some fingerprint examiners present an exemplar chart of a textbook case rather than showing the actual prints involved in the case being argued.¹⁸⁶ In other words, the charts operate to camouflage the movement of the locus of fact-finding out of the courtroom and into the laboratory of the fingerprint examiner, away

¹⁸⁴ Cole at 687-712.

¹⁸⁵ Cole at 687-712.

¹⁸⁶ Cole at 687-712.

from the common-sense discourse of jury truth-determination to the discourse created by professional fingerprint examiners.

This movement is reinforced by the sort of discourse created by fingerprint examiners, a discourse of absolute certainty and professional restraint cloaked in the trappings of a science. The language of fingerprint examination has been one of careful and methodological procedure right from the start. Even in 1906 when Jungel visited Scotland Yard all fingerprints had to be examined by two people in order to avoid mistakes.¹⁸⁷ This was coupled with a constant assertion that proper fingerprint matches were "perfect" in the sense that they could not occur by chance.¹⁸⁸ This is not to say that the general public necessarily believed this assertion, and as late as 1929 Foster still saw a need to "sell" fingerprinting as an infallible means of identification.¹⁸⁹ Fingerprint examiners avoided significant questioning of this assertion by maintaining consistency among their opinions, by avoiding the spectacle of dueling experts. In Britain this unanimity was not always maintained,¹⁹⁰ and this may explain the extraordinary level of organization seen by Inspector Jungel on his visit to Scotland Yard. Perhaps the extraordinary success the fingerprint

¹⁸⁷ Jungel

¹⁸⁸ Jungel; Primrose, "Correspondence re. the identification of criminals." National Archives of Canada, RG 18 Vol. 359, 1908.; Brownhill; Marquis

¹⁸⁹ Foster, Scrapbook

¹⁹⁰ Cole at 687-712.

examiners had in maintaining unanimity of opinion in North America was due to the astonishingly small number of individuals who considered themselves fingerprint experts in the early years of the use of fingerprinting there. In the earliest major fingerprint trial in North America, the trial of Jennings in Chicago, almost the entire fraternity of early fingerprint experts turned out, including Inspector Foster of the Dominion Police. This was the original group that had been trained in fingerprinting by Detective Ferrier of Scotland Yard at the St. Louis World's Fair in 1904.¹⁹¹ All five agreed that the fingerprints matched, and presented evidence to that effect.

Conclusion

Fingerprinting was and remains a revolutionary technique, one that provided two main benefits to those police forces that chose to implement it. It provided a cost effective and seemingly infallible means of identifying people in custody and of associating them with their past criminal misdeeds. Even today, the criminal record produced upon a query to the RCMP is not known as a criminal record, it is known as an "FPS" or fingerprint sheet. This revolutionary aspect of fingerprinting occurred in the context of policing not in the context of securing convictions. In this sense, it was merely a replacement for Bertillonage and other record-keeping techniques. While from a bureaucratic perspective it was revolutionary because of its relative ease of use

¹⁹¹ Cole at 687-712; see also Marquis and Brownhill

and exactness, it did not represent a significant change in the discursive formation surrounding policing. Rather it filled a need perceived by police since the invention of modern English-style policing.

The use of latent fingerprints at court, on the other hand, provided a revolutionary tool to the courts and to the police, a use which in the North American context was recognized contemporaneously with its introduction. The use of fingerprints as evidence at trial required that the fingerprint establishment, such as it was in the early twentieth century, meet the goals and expectations of legal procedure. It did so by establishing both explicit rules and methodologies along with discursive practices that met legal needs. Fingerprint examiners provided lawyers and courts with a complete system, a finished discourse that made truth claims that were incontrovertible within the discourse from which they were made. This seemingly perfect methodology coupled with argumentative sleight-of-hand that allowed early courts to believe they could see what the expert saw readily convinced courts to pass to the fingerprint expert the job of determining whether or not a fingerprint actually matched. From about the 1920's onward the fingerprint expert became the arbiter of truth where fingerprints were involved, and the sort of discourse used to discuss fingerprints was his or her discourse, not that of the court.

The act of selling fingerprinting to the courts required that the procedures of fingerprinting be designed in such a way so as to convince the

courts, to quote from contemporary law: "that it reflects a scientific theory or technique that has either gained acceptance in the scientific community, or if not accepted, is considered otherwise reliable in accordance with the methodology validating it."¹⁹² The concern with the repeatability of fingerprint identifications, the use of multiple examiners when making a match, and the use of 'charts' to explain how the methodology worked all represent attempts by fingerprint examiners to fulfill these requirements of the law. In this way fingerprint examiners adapted their discursive practices to meet the needs of legal discourse and to win the acceptance of their truth claims within legal discourse.

With the development of fingerprinting we can see the movement of a methodology for generating truth statements across several discourses, ultimately becoming acceptable to all. Fingerprinting started out as a scientific observation that no two people had fingerprints that were alike, was taken up by the imperial administration and applied as a means of social control there. It was then introduced to a police establishment already searching for new anthropometric techniques to use in identifying offenders. Finally, it was sold to the courts as a means of identifying offenders and generating circumstantial evidence to help in reaching legal-factual conclusions.

¹⁹² *R. v. Tenzin*, [1999] S.C.J. No. 74

At all stages, fingerprinting carried with it the aura of science and technology, a linkage essential to its ultimate acceptance by the law. The first chapter of this thesis sought to link the special place of the scientific expert in the courtroom to the shared history of law and science. This chapter has provided an historical example of the processes involved in the acceptance by the law of an outside scientific discourse. The next chapter will problematize the relationship between the scientific expert and the court looking to the example of native oral history evidence in the context of the Dalgamuukw case.

Chapter IV: Delgamuukw and Oral History Evidence

The preceeding chapters have explored the relationship between scientific evidence and the law of evidence in an historical context. The focus has been twofold. In Chapter II it was suggested that the development of probability theory was a necessary precondition for the development of the law of evidence and modern science. Thus, the acceptability of scientific evidence may be related to this shared background premise, a premise grounded in seventeenth and eighteenth century scientific thought. The focus then shifted to examine how new forms of scientific or technical evidence are received by the courts. Specifically, in Chapter III we examined how the discourses of fingerprinting passed through other types of discourses before entering a legal forum and that such evidence is often packaged in a manner thought to be acceptable to the legal system where its use there has been foreseen. The Foucauldian approach, which has been the basis of this analysis, asks that we go beyond description and problematize these relationships. In this chapter, we move from the early twentieth century to the contemporary law of evidence, and the reception of scientific history evidence as compared to that of native oral history in the context of the *Delgamuukw* case. We thus move away from the earlier focus upon the criminal law, a change in focus that is perhaps justified by the striking difference in the way these two forms of evidence were

handled at trial in the *Dalgamukew* case. This is done to sharpen the focus upon one of the primary ideas used by Foucault in his problematizations, which is the power/knowledge relationship, and to provide a contemporary context in which to problematize the special place scientific forms of knowing have in the courtroom.

Foucault attacks the idea that knowledge can exist in the absence of power. He suggests, as an alternative, that power produces knowledge, “that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations.”¹⁹³ A subject of knowledge cannot be free of power relations, the subjects and objects of knowledge, along with all the interrelated rules, which define knowledge as knowledge, exist through the very action of power/knowledge. Whether acting with or struggling against power, it is only through the action of the power/knowledge system that the possible domains of knowledge and the forms they might take derive their existence.¹⁹⁴ This is not the power of coercive force in the sense of physical violence. This is a different sort of power, a decentered power, not a property of any individual but a general strategy, it is a power “exercised rather than possessed; it is not the ‘privilege,’ acquired or preserved, of the dominant class, but the overall

¹⁹³ Foucault, Michel, *Discipline & Punish*, Alan Sheridan trans. (New York: Random House, 1977) at 27

¹⁹⁴ Foucault, 1977 at 27-28

effect of its strategic positions.”¹⁹⁵ It is intimately linked to knowledge because, in this conception, power is expressed as a series of techniques, a series of tactics and strategies. These act as “supports for the power and knowledge relations that invest human bodies and subjugate them by turning them into objects of knowledge.”¹⁹⁶

It is in this subjugation of bodies that knowledge and power interact. One cannot subjugate, in this conception, without first objectifying a particular area as appropriate for the development of a knowledge base about it. Once knowledge is produced, it inherently produces the series of techniques of power. However, power also produces knowledge by defining the appropriate objects of knowledge, and it is in this fashion that the two act in concert. In this sense, Foucault is not really talking about power *and* knowledge, but about power/knowledge as an almost unified structure both for determining the objects of knowledge, generating that knowledge, and subsequently generating tools that may be used for social control. For Foucault, the development of this system, which he sees as characteristic of modern European-style society, represents a fundamental change in the way individuals exist. The concepts of *normalization* and *bio-politics* describe ways of almost invisibly coercing individuals

¹⁹⁵ Foucault, 1977 at 26

¹⁹⁶ Foucault, 1977 at 28

into certain patterns of behavior, perhaps into specific internalized views of themselves.¹⁹⁷

Power itself is fundamentally related to discourse in the sense that it also exists in relationships. Not, as discourse, in the relations between statements, for power:

...is only a certain type of relation between individuals. Such relations are specific, that is, they have nothing to do with exchange, production, communication, even though they combine with them. The characteristic feature of power is that some men can more or less entirely determine other men's conduct—but never exhaustively or coercively. A man who is chained up and beaten is subject to force being exerted over him. No power. But if he can be induced to speak [...], then he has been caused to behave in a certain way. His freedom has been subjected to power.¹⁹⁸

In this manner power is also always subject to possible resistance. One can, in the above example, resist by refusing to speak. However, power has its own sense of rationality, and it is by resisting or criticizing the rationality of power that resistance to it can be most effective. By forcing power to re-rationalize in some other form it may be modified, but its existence remains and it will continually remake itself in one form or another. The goal is to control this rationalization.¹⁹⁹

¹⁹⁷ Foucault, 1977 at 97-98, 142-143

¹⁹⁸ Foucault, Michel, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*, Colin Gordon ed. (Brighton: Harvester, 1981) at 253

¹⁹⁹ Foucault, 1981 at 254

The knowledge/power relationship allows us to problematize the use of scientific expert evidence in contemporary courts, for it allows us to see what has earlier been described as a shift of discursive locus as a transfer of power. More accurately, we can see the relationship between scientific and legal discourses in the context of power and resistance on the part of both actors. We can also see how discourses of truth that do not form a part of either scientific or legal truths may be marginalized by the exclusive character of legal discourse. Finally, we can ask whether marginalized discourses can exploit the tension between legal and scientific discourses to achieve a point of entrance into the legal forum.

This chapter can obviously do no more than touch on these questions. First, it will briefly examine the contemporary law of evidence in Canada to highlight both the exclusivity and the tensions that exist between legal and scientific discourses. Second, it will examine what may be one of the most extreme examples of a marginalized non-scientific discourse, that of native oral history, in the context of the decisions in the *Dagumukw* case in Canada. This second example will be used to highlight the process of marginalization of a discourse outside that of law or science.

Expert Evidence in Canada

Expert evidence in general is classed as opinion evidence. As a general rule, it has historically been held that opinion evidence is *prima facie* inadmissible because it is supposed to be the role of the trier of fact to form

opinions, not that of outside witnesses.²⁰⁰ This 'ultimate issue rule' has been overruled by the Supreme Court of Canada in *R. v. Graat*:

Except for the sake of convenience there is little, if any, virtue, in any distinction resting on the tenuous, and frequently false, antithesis between fact and opinion. The line between "fact" and "opinion" is not clear.

To resolve the question before the Court, I would like to return to broad principles. Admissibility is determined, first, by asking whether the evidence sought to be admitted is relevant. This is a matter of applying logic and experience to the circumstances of the particular case. The question which must then be asked is whether, though probative, the evidence must be excluded by a clear ground of policy or of law.

[...] As for other considerations such as "usurping the functions of the jury" and, to the extent that it may be regarded as a separate consideration, "opinion on the very issue before the jury", Wigmore has gone a long way toward establishing that rejection of opinion evidence on either of these grounds is unsound historically and in principle. If the court is being told that which it is in itself entirely equipped to determine without the aid of the witness on the point then of course the evidence is supererogatory and unnecessary. It would be a waste of time listening to superfluous testimony.²⁰¹

While the concern over the place of opinion evidence remains, it has been placed in the background where lay witnesses are concerned.²⁰² Given the

²⁰⁰ Paciocco and Stuesser at 113

²⁰¹ *R. v. Graat*, discussed in Paciocco and Stuesser at 114-115

²⁰² Two exceptions do remain, however. The first is the rule against witnesses presenting opinions as to domestic law. The second is the rule against oath-helping. The rule against oath-helping is aimed to prevent witnesses from usurping the role of the trier of fact in determining the credibility of evidence. The rule against opinions of law is designed to preserve the position of the judge as the abiter of law. (Paciocco and Stuesser at 116-119)

difficulties in separating opinion from fact (in itself a philosophically questionable distinction), the Supreme Court determined that the standard evidentiary rules provide adequate protection against the usurpation of the fact-finding role. This is not the case for expert witnesses, however.

The courts see expert witnesses as providing needed information yet creating problems for the trier of fact not found with lay opinions. The key case on the admissibility of expert testimony in Canada is the Supreme Court's decision in *R. v. Mohan*. Sopinka, J. writing for the Court established four criteria:

Admission of expert evidence depends on the application of the following criteria:

- (a) relevance;
- (b) necessity in assisting the trier of fact;
- (c) the absence of any exclusionary rule;
- (d) a properly qualified expert²⁰³

Assessing relevance requires a bit more than the usual test required for all evidence:

There is a danger that expert evidence will be misused and will distort the fact-finding process. Dressed up in scientific language which the jury does not easily understand and submitted through a witness of impressive antecedents, this evidence is apt to be accepted by the jury as being infallible and as having more weight than it deserves.²⁰⁴

²⁰³ *R. v. Mohan*, [1994] 2 S.C.R. 9

²⁰⁴ *R. v. Mohan*

This discussion occurred in the context of a polygraph expert, but could be considered when dealing with any expert witness. Under the heading of 'necessity' the court addressed the question of whether special expertise was needed to understand the evidence underlying the expert testimony. What Sopinka J. termed a "precondition" is required before one can allow an expert witness to testify. Quoting from Dickson J's judgement in *R. v. Abbey*:

With respect to matters calling for special knowledge, an expert in the field may draw inferences and state his opinion. An expert's function is precisely this: to provide the judge and jury with a ready-made inference which the judge and jury, due to the technical nature of the case, are unable to formulate. [...]

The evidence must be necessary to enable the trier of fact to appreciate the matter in issue due to their technical nature.²⁰⁵

This evidence must be assessed taking into account the potential that it will be over-weighted due to the nature of the person presenting the evidence. That "too liberal an approach could result in a trial's becoming nothing more than a contest of experts with the trier of fact acting as referee in deciding which expert to accept."²⁰⁶

This is especially important, as it seems that a 'properly qualified expert' is almost exclusively a scientific expert. In *R. v. Mohan*, a properly qualified expert was defined as: "[...] a witness who is shown to have acquired special or peculiar knowledge through study or experience in respect of the matters on

²⁰⁵ *R. v. Mohan*

which he or she undertakes to testify."²⁰⁷ This would seem to include a great deal of non-scientific evidence, and arguably include even the evidence of a psychic. These are relatively modest requirements.²⁰⁸ However, the evidence of a psychic is not acceptable to the courts. Scientific opinion evidence seems to have a special place in the Anglo-Canadian legal system. Most expert evidence is scientific evidence, and most discussions of expert evidence do so in the context of scientific expertise. In *Mohan*, for example, Sopinka J cites *R. v. Turner*: "An expert's opinion is admissible to furnish the court with *scientific* information which is likely to be outside the experience and knowledge of a judge or jury."²⁰⁹ In *R. v. Abbey*, Dickson J (as he was then) quotes Lawton L.J. in *Turner*: "An expert's opinion is admissible to furnish the Court with scientific information [...]."²¹⁰ In *R. v. Beland*, in addition to quoting the above passage, McIntyre cites Lord Cooper in *Davie v. Magistrates of Edinburgh*: "Their duty is to furnish the Judge or jury with the necessary scientific criteria for testing the accuracy of their conclusions [...]."²¹¹ It seems that expert evidence is generally considered to be contiguous with scientific expert evidence, for we see few

²⁰⁶ *R. v. Mohan*

²⁰⁷ *R. v. Mohan*

²⁰⁸ *R. v. Marquand*, [1993] 4 S.C.R. 223; *R. v. R (W.D.)* (1994), 35 C.R. (4th) 343 (ONT C.A.); as described in Paciocco and Stuesser at 121-122

²⁰⁹ *R. v. Turner* (1974), 60 Crim. App. R. 80 (Q.B.) as cited in *R. v. Mohan*

²¹⁰ *R. v. Turner*, at 83, as cited in *R. v. Abbey*, [1982] 2 S.C.R. 24

²¹¹ [1953] S.C. 34, at p. 40, as cited in *R. v. Beland*, [1987] 2 S.C.R. 398

references to forms of expert testimony that do not incorporate the qualifier 'scientific.'

The law of evidence has also developed a mechanism to allow the admission of 'novel science,' that is scientific evidence that has not as yet received universal acceptance among scientific experts. Novel science cases have been relatively rare in Canada, but the recent judgement of the Ontario Court of Appeal in *R. v. Teixeira*²¹² has greatly clarified this area of the law. Taken with *Mohan*, *Teixeira* requires that all novel scientific evidence receive special scrutiny by the courts. In *Mohan*, in a section quoted in *Teixeira*, Sopinka J states: "[...] expert evidence which advances a novel scientific theory or technique is subjected to special scrutiny to determine whether it meets a basic threshold of reliability."²¹³ Not only the courts ignore the possibility of types of novel evidence other than scientific; the textbook writers do as well:

Factors affecting the reliability of the opinion include the extent to which the scientific theories on which it is based are accepted in the relevant scientific community, the potential rate and nature of errors that the technique or theory can produce, and whether the technique of theory comports with the scientific method or has fail-safe characteristics. Using such factors, a court can get some measure of the reliability of the opinion evidence. (P & S s. 4.4)

²¹² *R. v. Teixeira*, this decision was appealed to the SCC, the appeal was dismissed without reasons excepting to note substantial agreement on the part of the Court with the reasons given by Finlayson JA at the Ontario Court of Appeal.

²¹³ *R. v. Mohan*

Since novel expert testimony appears to be referred to only in the context of scientific expertise, it seems reasonable to conclude that the procedures developed to allow new forms of expert evidence to become usable at trial are designed to allow only scientific expertise to become admissible. There are also clearly two aspects to the acceptability of scientific testimony. The first is the idea that the subject of the testimony must be acceptable within the "relevant scientific community," indicating that not only will scientific discourse be determinant of admissibility but also that it will be the discourses of scientists. Second, the conception of science that underlies the conception of novel science seems closely associated with an experimental model, the model of the physical sciences. This suggests that a social scientist might have greater difficulty qualifying as an expert than would a physicist. These themes will appear again in the discussion of *Dalgamukw*, and some of them are also apparent in *Terceira*.

The issue in *Terceira* revolved around the early use of DNA evidence, and Finlayson JA stated the problem the court faced as follows: "we are concerned with the threshold issue of reliability, i.e. is the science itself valid."²¹⁴ This requires the court to perform a very interesting task in that it must determine what 'valid science' is. Rather than develop a formal structure, Finlayson chose to develop a key distinction, a distinction between assessing the

validity of the methodology used by the putative expert in reaching his or her conclusions and the assessment of the application of the methodology. The methodology used by the expert was found to relate to the question of the degree of weight to accord the evidence, and this was to be a matter for the trier of fact.²¹⁵ Restated, the function of the trial judge in determining whether to admit novel scientific evidence:

is limited to an overview of the evidence proffered in order to be satisfied that it reflects a scientific theory or technique that has either gained acceptance in the scientific community, or if not accepted, is considered otherwise reliable in accordance with the methodology validating it.²¹⁶

Science is therefore self-defined. While the ultimate determiner of the admissibility of new types of scientific evidence remains a judge's assessment, that assessment rests upon the opinions of scientists as to what constitutes valid science and scientific methodology.

In this brief analysis of the current law regarding expert testimony, we can see the two questions posed at the beginning of this thesis. First, we see that science appears to have a special place in that expert evidence is almost exclusively scientific, leading to the question of why this should be the case. Second, by requiring novel forms of expert testimony to fit scientific theory and

²¹⁴ *R. v. Teixeira*

²¹⁵ *R. v. Teixeira*

²¹⁶ *R. v. Teixeira*

practice, we must ask how the discourse of law interacts with the discourses of science. Since novel forms of expert testimony are assumed to be scientific testimony, it seems reasonable to collapse the notion of the expert and the scientific expert in order to characterize the nature of expertise in the contemporary courtroom.

What is an expert witness? Before the notion of the expert witness can be addressed the notion of expertise must first be understood. The concept of novel science provides a strong indication of what expertise means in a legal context. The test developed in *Tereira* linked expertise to the body of knowledge and methodology used by the expert to form an expert opinion. To have expertise useful to the court the putative expert must demonstrate that the theory and technique used to reach an opinion were either generally considered valid in the scientific community or were validated by scientific methodology. The process works somewhat as follows: The expert makes a truth claim. Truth claims are only true insofar as they are true within the discourse used to validate that truth claim. Expert testimony is scientific testimony and thus must be considered as valid within *scientific* discourse. A judge makes this determination, but the discursive frame of reference is not really that of the law. The frame of reference is that of science.

This leads to an important observation. Expert witnesses, though validated as experts by legal mechanisms derive their professional expertise not

from legal discourse but from the scientific and technical discourses associated with their fields of expertise. Indeed, even the evidence they present derives its persuasiveness not from the law of evidence and the procedure of court but from the practices of scientists and the procedure of the laboratory. Their prestige comes not from their qualification as experts but from their position as professors, doctors, PhDs, and expert technicians, as well as from their extensive publication records and professional accomplishments. The expert takes evidence, be it DNA or a spent bullet, and makes a truth statement localized in the discourses of science, discourses that share certain conceptions of causality and proof with legal conceptions of proof, as we saw in Chapter II. The presence of an expert in the courtroom thus shifts the discursive locus used to determine the validity of the expert's testimony out of the court and the common sense of the jurors and removes it to the discourses of science. The concern of courts with the 'usurpation' of the fact-finding exercise of the trier of fact is thus valid, even if the language may be a bit strong.

Courts are concerned with the usurpation of fact-finding, not only because of this shifting of the locus of factual analysis outside the forum of the court, but also because of a fear that the prestige of the expert might force a jury to place undue weight on the testimony of an expert. This concern reflects the enormous prestige accorded scientists in Canadian society. The importance of scientists is also reflected in the almost exclusive use of scientists as expert

witnesses. If scientist and expert are synonymous, embedded in the discourse of the law itself is recognition of the special place of scientific expertise in the legal forum, a special place that seems related to the shared origins of probability and proof in the discourses of both law and science. In a sense, the discourses of the law itself as reflected in the requirements for the qualification of an expert recognize the validity of the truth-claims made by the discourses of science.

Notions of novel science and the expert as a scientific expert suggest a degree of exclusivity in this interaction. Other discourses of truth offered into evidence in a manner in which they provide truth claims validated outside the discourses of science appear to be *prima facie not* expert discourses, and thus the validity of the truth claims they make is evaluated by legal practices. How the evidence of a putative expert is evaluated seems related to how much it fulfills legal preconceptions of what science should be, with the evidence of social scientists or historians farther down the scale of than that of physicists. The notion of whether a form of evidence is 'scientific' should not be seen as a clear demarcation but rather a gray area. The *Delgamuukw* case offers an example of a situation where the plaintiffs attempted to validate the truth claims of non-western discourse through social science, yet even that attempt was only marginally successful at trial. Ultimately, the Supreme Court of Canada

validated the native oral history evidence presented in that case as an appropriate form of discourse to use in land-claims cases.

Delgamuukw

The *Delgamuukw* case is interesting for a variety of reasons.* It represents a landmark decision of the Supreme Court of Canada that, while not perhaps profoundly changing the law surrounding native land claims, at least clarifies it to a great extent. When all three decisions, that of the BCSC, the BCCA, and the SCC are taken together, they represent a comprehensive attempt on the part of the courts to grapple with many of the complex issues surrounding land claims, ranging from the legal construction of aboriginal title to specific rules of evidence.

Land claims cases are interesting from an evidential standpoint in part because of the many types of evidence used by claimants to support their territorial claims. In *Delgamuukw*, for example, the evidence included historical documents, the analyses of historians, geological evidence, archaeological evidence, social science evidence, and oral history. While it would be useful in the context of the project undertaken here to look at all these types of evidence, space prevents discussing more than a few examples. The focus here will therefore be on how the various levels of the court approached what might be loosely described as the scientific forms of evidence which will be contrasted to

the approach taken with the oral history evidence. While oral history is approached as a unitary form of discourse, certainly an oversimplification given the diverse possible sources of oral history, the scientific evidence will generally be divided into social science and 'hard' science evidence. This division is essential to understanding the differences in the court's approach to those two forms of scientific evidence.

Crucial to the *Delgamuukw* judgements is the place of native oral history as an element of the evidence supporting the land claims made. These cases, taken with the important judgment of the SCC in *Van der Peet*,²¹⁷ have a profound, and perhaps very positive impact on the way Canadian courts should deal with this sort of evidence. They afford it a special place in the context of land claims disputes, a place which earlier law denied it. While this certainly represents a quantitative improvement in the respect the courts are prepared to show oral history evidence, it should not be taken as necessarily mitigating the difficulties associated with the use of oral history evidence. Structural necessities of the Anglo-Canadian adjudicative process place oral history evidence at a disadvantage when compared with forms of evidence derived

* I will be referring to the *Delgamuukw* case by the division of court, i.e. the BCSC, BCCA, and SCC. Full case references are available in the bibliography, and all further citations will be in text.

²¹⁷ *R. v. Van der Peet*, [1996] 2 S.C.R. 507

from a western paradigm. This is inherent in the structure of legal discourse itself, perhaps due to its nature as an agent of imperialism.²¹⁸

This series of cases is also interesting for the amount of scientific evidence used both by the plaintiffs and the respondents to support their arguments. Scientific evidence was used to try and establish boundaries and length of habitation, for example. Other forms of evidence, such as the use of affidavits of recollections of native life, historical records, and early white records were also adduced during the course of an extremely lengthy and complicated trial. The focus here will be on the difference in the court's weighting at trial of scientific and oral history evidence, and on the changes to that interaction brought about by the SCC's decision upon appeal. The choice of this particular focus is dictated to some extent by convenience and to some extent by the theoretical framework used for analysis, for really the focus is not on two types of evidence but rather on three discursive frameworks in which evidence can be judged. These three frameworks are oral history, science, and law.

As has been demonstrated in the earlier chapters of this thesis, in general the law is willing to accept as valid truth claims made from within scientific discourse. Another possible approach the legal system can take with

²¹⁸ Williams Jr., Robert A. *The American Indian in Western Legal Thought: The Discourses of Conquest* (Oxford: Oxford University Press, 1990) at 6-7

respect to truth claims coming from a particular discursive framework is not to recognize that particular discourse as a legitimate generator of truth claims. Such truth claims are not privileged, and must be analyzed from within legal discourse in order to ascertain the degree of usefulness, that is the *weight*, to be assigned to them for the purposes of legal adjudication. Such a discourse is effectively subjugated by legal discourse. An extreme example of this sort of process was the subjugation of the discourse of the insane in what Foucault termed the “classical madness,” a concept that will be returned to later in this chapter.²¹⁹

This presents an important impediment to native people pressing land claims. One of the jobs of a trial judge (and the jury, if there is one) is to assign weight to various sources of evidence. He or she must decide how much credence to give every source of evidence and come to a decision based upon a sort of consensus of the evidence, that is what seems the most probable interpretation of all the truth claims presented before the court. This is not a particularly easy task, and often for very good reason certain types of evidence are given lower or higher weighting generally by courts. For example, in court identifications of individuals not previously known to a victim may not be given as much weight as identification by means of properly constructed line-ups on

²¹⁹ Foucault, Michel *Madness and Civilization: A History of Insanity in the Age of Reason*, (New York: Random House, 1965) at 98-100

the reasonable assumption that they are considerably less reliable. Similarly, it may not be unreasonable for judges to weight uncorroborated oral history provided by people who are also parties to the action less highly than evidence from outside sources. This perhaps explains the importance given scientific evidence by the plaintiffs in the *Delgamuukw* case, and provides an opening for comparing legal construction of scientific and oral history evidence.

At the trial level, oral histories were ruled admissible on the basis of a hearsay exception for declarations made by deceased persons, essentially that they were admissible out of necessity. However they were weighted very low.

“The trial judge, however, went on to give these oral histories no independent weight at all. he held, at p. 180, that they were only admissible as ‘direct evidence of facts in issues...in a few cases where they could constitute confirmatory proof of early presence in the territory.’ His central concern that the *adaawk* and *kungax* (the two traditional oral histories in question) could not serve ‘as evidence of detailed history, or land ownership, use or occupation.’”²²⁰

Here one can see the clash of discursive metaphors of history. The oral histories are not literally true, they confound fact and myth, and they do not provide a linear view of history. They also lack detail (what, land surveys?) about the extent of the specific lands in question.

²²⁰ *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010 (SCC) at para. 96

There was clearly recognition on the part of the court that the cultural perspectives of native people are different from that of the court and perhaps of the scientists involved:

I am disposed, with considerable hesitation, and with due allowances for weight, to recognize that culture, in a generic sense, may have a role in the formulation of opinions in these sciences. In a case such as this, however, where the plaintiffs and their ancestors are the only sources of these histories, the court may not be the best forum for resolving such difficult and controversial academic questions. One cannot, however, disregard the "indianness" of these people whose culture seems to pervade everything in which they are involved. I have no doubt they are truly distinctive people with many unique qualities.

For example, they have an unwritten history which they believe is literally true both in its origins and in its details. I believe the plaintiffs have a romantic view of their history which leads them to believe their remote ancestors were always in specific parts of the territory, in perfect harmony with natural forces, actually doing what the plaintiffs remember their immediate ancestors were doing in the early years of this century. They believe the lands their grandparents used have been used by their ancestors from the beginning of time. They believe their special relationship with land has always been enlightened. And they believe Indian social organization in the territory has always been more or less as it is now.²²¹

Why was this evidence given such low weight? This extract emphasizes two aspects which to be addressed here. First that the cultural specificity of some of the evidence, what the trial judge here calls "Indianness," was an issue when

²²¹ *Delgamuukw v. British Columbia* (SCC) at para. 247

weighting some of the evidence. Second, this extract emphasizes that the court continues to view this sort of evidence from the court's perspective. Following the Foucauldian analytical framework, there is no such thing as literal truth except within the context of a particular discourse of truth claims. The trial judge, by emphasizing the lack of "literal truth" in oral history, adopts as acceptable to the court only one discourse of truth, that of the court. The "Indian" discourse of truth as exemplified by the oral history he so denigrates as overly "romantic" represents in this framework simply another conception of truth, one that to the court appears suspect. This emphasizes that while oral history evidence may be admissible, it is weighted according to legal conceptions of what is true, that is within a legal discourse of truth.

One should also note that legal needs arising from the character of the litigation also had a negative impact on the weighting of native testimony:

"For example, the fact that the plaintiffs' claim has been so much discussed for so many years, and the further fact that so much of the evidence was assembled communally in anticipation of litigation, or even during this litigation, is a fact which must be taken into account."²²²

This seems a legitimate worry, but one must wonder in what sort of land-claims litigation such worries would not exist. This sort of consideration was also used to attack scientific testimony. In essence, if the scientists involved were

²²² *Delgamuukw v. British Columbia* (SCC) at para. 248

considered too close to the plaintiffs, their position as scientists resulted in their results being questioned:

This evidence was seriously attacked on various grounds, particularly that they were too closely associated with the plaintiffs after the commencement of litigation, that Dr. Daly produced no notes of his "observations", that Dr. Mills was more interested in reincarnation than Wet'suwet'en culture, and that they did not conduct their investigations in accordance with accepted scientific practices. (248)

It is the last line that is crucial in understanding this attack (by the respondents, here rephrased by the trial judge). It represents a two-pronged attack, the first prong being an attack on the personal credibility of the witnesses arguing that they became too closely involved with the plaintiffs to be considered as objective witnesses. The second prong of the attack is based upon the *scientific* credibility of their results. The two forms of attack operate together. To attack the individual objectivity of a scientific expert is to assert that he or she was not really a scientist in this instance. It argues that this evidence should not be considered scientific evidence at all, and that some of the scientific evidence should be weighted on par with the affidavit evidence of native life, and hence weighted very low.

This is only important if scientific evidence is given a particular sort of privilege as a form of evidence in the court. One must ultimately ask what the difference between the affidavit evidence of native life and modern anthropological evidence really is. They both represent attempts to compile a

variety of statements about what people consider their relationship to the land and the boundaries of that land from current sources. The difference seems to arise in the characterization of one sort of evidence as “scientific” and the other as a series of individual statements, that is as non-scientific. Thus, if a particular compilation made by a scientific expert leads to specific conclusions, the court may well accept those conclusions as being the result of valid science, and thus to be weighed only through scientific considerations and not by the legal discourse of fact-finding. To argue that a particular scientist did bad science is to analyze that particular source of evidence not from a legal perspective but from a scientific one, whereas to attack a scientist for personal bias pulls his or her evidence outside the realm of science and allows it to be weighed as would any other evidence.

Despite the obvious fact that the anthropological evidence adduced by the plaintiffs was treated as not very trustworthy by the courts, this did not represent a finding that most such evidence would be untrustworthy. The low weighting given the scientific evidence, as described earlier, was premised either upon the personal attributes of a particular scientist or on its unreliability due to it being “bad science.” The oral history evidence was dealt with in an entirely different fashion:

Except in a very few cases, the totality of the evidence raises serious doubts about the reliability of the *adaawk* and *kungax* as evidence of detailed history, or land ownership, use or occupation. I say this reluctantly, without intending any affront

to the beliefs of these peoples, but I am reminded by many learned authors to be cautious. Trigger warns that tribal societies have little interest in conserving an accurate knowledge of the past over long periods of time. Drs. Bishop and Ray, historical geographers, said in ex. 1076: "Even when employed carefully, memory ethnography can only provide totally accurate information for relatively short time spans, usually one hundred years at the very most."²²³

The trial judge does not discuss how or why these particular conclusions regarding the trustworthiness of oral history were reached, rather he accepts what was presented to him as a body of well-accepted scientific knowledge. This privileged scientific truth claim is then used to influence the weighting of another body of evidence, the evidence coming from oral history.

This does not of course mean that the scientific evidence was not also examined carefully, it just means that, with a few exceptions discussed earlier, it was generally looked at in the context of scientific discourse. One can look at the weighting of the archaeological evidence, for example. In general, the conclusions of the archaeologists were accepted, as were the limitations of the conclusions they reached. It was these limitations which led to this sort of evidence not being particularly useful to the plaintiffs' case:

In my view, the archaeological evidence establishes early human habitation at some of these sites, but not necessarily occupation by Gitksan or Wet'suwet'en ancestors of the plaintiffs. It is highly significant that there is no physical evidence supporting the plaintiffs claims at other than a few Skeena village sites and at Hagwilget and Moricetown Canyons. Moreover, much of this evidence is highly equivocal

²²³ *Delgamuukw v. British Columbia* (SCC) at para. 258

with findings of white man's garbage mixed with possible archaeological features, and similar findings of both kinds have been found at many locations throughout the region outside the territory.

The archaeological evidence is helpful to the plaintiffs because it establishes human habitation at a few locations along the Skeena and at two locations on the Bulkley for a long, long time before the date of contact. However, such evidence is not directly connected to the ancestors of the plaintiffs. The absence of any significant archaeological findings at the supposed sites of Temlaxam and Dizkle casts doubt upon the authenticity of some of the adaawk and kungax, and upon the migration theory of Ms. Marsden which I shall discuss shortly.²²⁴

Thus, there was archaeological evidence that, although for the most part helping the plaintiffs' case also materially hurt it, for much of the archaeological evidence was considered inconsistent with the oral history evidence. What is interesting here is that the *authenticity* of the key oral history is questioned. Once again, we can see that scientific evidence, when meeting the "good science" sort of test applied by the trial judge, is almost always capable of lowering the probative value of oral history evidence.

It is also important to note the tone taken when dealing with what one might call "hard" scientific evidence, evidence relating to geology and biology:

I cannot believe such an eminent scientist would have given that evidence if there was such a basic flaw in his theory. I therefore conclude that the slide probably did cause the level of the lake to rise as postulated.²²⁵

²²⁴ *Delgamuukw v. British Columbia* (SCC) at para. 263

²²⁵ *Delgamuukw v. British Columbia* (SCC) at para. 269

This was in response to a question posed by the trial judge that led to a response suggesting perhaps a serious difficulty with this particular view of a data set. When compared to the extracts dealt with earlier regarding oral history, one can see the degree of deference given what was regarded as “good science.” What was good science in this context? It was science overwhelmingly accepted as methodologically sound and seemingly objective. This is in contrast to the view the trial judge took of the work of the two anthropologists discussed earlier, which was seen as subjective, methodologically flawed in the context of the field in which they were operating, and a little too close to the plaintiffs. One can also see the concept of the eminent scientist, presumably shown through the credential proving process. This is in contrast to the way a much less eminent scientist was treated, a student who was also a party to the action by virtue of her clan affiliation:

I am unable to accept Ms. Marsden's theory. I have no doubt it is put forward honestly and in good faith, but her qualifications are not adequate for such a study, it has not been published or subjected to academic or other learned scrutiny, she is an interested party, and she has ignored some verified facts and other learned opinions such as those of Drs. Kari and Gottesfeld because they "they do not fit her chronology".²³⁶

Once scientific evidence is accepted as “good science” it has a privileged place in the trial judge’s courtroom. It was after that point subject to

question only from a scientific perspective, and was generally weighted higher than other forms of evidence. Where oral history evidence was contradicted by scientific evidence, the former always won out. While the judge explicitly recognized that oral history evidence came from a cultural context different from that of science or courtroom fact-finding, this did not prevent its being weighed as any other sort of evidence might have been. Thus, while contradictions among scientists might be dealt with as academic disputes, and significant inconsistencies accepted as part of the process of science, the oral history evidence was not allowed the same leeway. In essence, contradictions both within the oral history evidence and between it and the scientific and other evidence led to its being given a very low weight in the final judgment, being useful only as corroborative evidence. Interestingly, it would have perhaps been just as reasonable to invalidate parts of the scientific evidence for precisely the same reasons, but this was not what was done.

For the most part, the BCCA would not interfere with the trial judge's findings of fact, and thus that decision is of little interest for the present analysis. Instead, we will turn directly to the decision of the Supreme Court of Canada, and in particular the judgment of Lamer, CJ for the majority, who also provided the majority judgment in *Van der Peet*. All the various judgments were for the most part in agreement on the issue of the oral history evidence.

²²⁶ *Delgamuukw v. British Columbia* (SCC) at para. 272

The SCC, unlike the BCCA, was quite willing to interfere in findings of fact according to the following principle:

In cases involving the determination of aboriginal rights, appellate intervention is also warranted by the failure of a trial court to appreciate the evidentiary difficulties inherent in adjudicating aboriginal claims when, first, applying the rules of evidence and, second, interpreting the evidence before it.²²⁷

Further, quoting *Van der Peet*:

The courts must not undervalue the evidence presented by aboriginal claimant simply because that evidence does not conform precisely with the evidentiary standards that would be applied in, for example, a private law torts case.²²⁸

This represents a sensitivity on the part of the court to the inherent difficulties present in attempting to use any sort of oral history evidence. It also provides a much broader framework for appellate courts to review the findings of fact by trial courts than might otherwise be the case.

Lamer CJ stated that the problems associated with oral histories, and for which McEachern weighted them so lowly, are associated to a greater or lesser degree with all oral histories:

The implication of the trial judge's reasoning is that oral histories should never be given any independent weight and are only useful as confirmatory evidence in aboriginal rights litigation. I fear that if this reasoning were followed, the oral histories of aboriginal people would be consistently and systematically undervalued by the Canadian legal system, in

²²⁷ *Delgamuukw v. British Columbia* (SCC) at para. 80

²²⁸ *Delgamuukw v. British Columbia* (SCC) at para. 80

contradiction of the express instruction to the contrary in *Van der Peet* that trial courts interpret the evidence of aboriginal peoples in light of the difficulties inherent in adjudicating aboriginal claims.²²⁹

What is interesting here is the concern with the implications of the sort of approach taken by the trial judge. Essentially, the problems the trial judge found with the oral history at trial were considered by the SCC as problems inherent in any attempt to use oral history evidence. The policy implication of allowing the approach used at trial is that in almost all land claims adjudication oral history evidence will not be useful to the plaintiffs (assuming the plaintiffs are the native people pressing land claims at court). The SCC was then rightly concerned that this implication placed insurmountable barriers before such claims.

The response to this concern was not, however, to assign a specific weight to oral history evidence, nor was it to privilege oral history evidence. The response was to require trial judges to weight oral history evidence within the legal framework, that is within the context of the inherent difficulties of interpreting such evidence within a legal context, and thus the two principles laid out in *Van der Peet* were applied in the context of the trial judges' weighting of oral history evidence in the instant case:

Accordingly, "a court must take into account the perspective of the aboriginal people claiming the right. . . . while at the same

²²⁹ *Delgamuukw v. British Columbia* (SCC) at para. 98

time taking into account the perspective of the common law" such that "[t]rue reconciliation will, equally, place weight on each"²³⁰

This quotation from *Van der Peet* contains the two principles. First, that oral history evidence (indeed all aboriginal source evidence) must be weighed taking into account both the perspectives of the aboriginal people adducing the evidence and the perspective of the law. Thus, if only oral history is available, it must be taken into account and appropriately weighted. As well, the second principle holds that the law of evidence must be adapted to allow such evidence to be heard in court.²³¹ While this represents a significant change, it must be noted that the legal structure is still effectively more important, and that the effective subjugation of oral history has not changed. The aim is "reconciliation" but this reconciliation occurs in the courtroom context. The law may change, and indeed might take into account difficulties inherent in the presentation of oral history evidence, but it is still ultimately the law that determines the usefulness of a particular piece of evidence. Thus, unlike the discourses of science, the law remains the final arbiter of truth in the oral history context.

Thus, the SCC (for the majority) held that in weighing oral history evidence, the difficulties inherent in proving aboriginal rights or title claims

²³⁰ *Delgamuukw v. British Columbia* (SCC) at para. 81

²³¹ *Delgamuukw v. British Columbia* (SCC) at para. 84

must be taken into account. It represents an unwillingness by the court to kneecap aboriginal claims right from the start because of an unwillingness to deal directly with the problem of oral history evidence. However, in this decision the court does not apply a specific weight to the evidence, since that is a problem for appellate courts in the first place and they were in any event compelled to order a new trial because of defects in the pleadings (not unusual in trials over a year long).

Following *Van der Peet* and *Delgamuukw*, oral history evidence is not only admissible, it must be given appropriate weight. However the SCC has not provided any guidance as to what sort of weight it should be given. This will be especially difficult in cases where scientific evidence contradicts oral history. To state at the appellate level that, as a principle of law, oral history evidence must be weighted appropriately is quite different than actually applying that principle in the course of a trial.

This may exist, in part, because the discourse inherent in oral history is one which is fundamentally different to the sort of discourse used by the court system, which may stem in part because of the sort of world view inherent in oral history. To quote from the opening address by the claimants in *Delgamuukw*:

The Gitksan and Wet'suwet'en world view is of a different order. Anthropologists have long realized that a people's world view is composed of two interrelated parts" first the notion of how the world is structured, of how its parts have been

fashioned into a cohesive whole; and second, a set of rules by which that structure is set into motion and how that motion can be controlled or directed. [...] To the Gitskan and Wet'suwet'en, human beings are part of an interacting continuum which includes animals and spirits. [...] To the Gitskan and Wet'suwet'en, time is not linear but cyclical.²³²

The aboriginal view of time and space as cyclical is significantly different from the legal. Conceptions of property are also extremely different, as are conceptions of law or rules of government. Notions of causality are also significantly different in the Gitskan and Wet'suwet'en worldview. 'Good' oral history must conform to these views, is a product of these views. Its truth claims, like any other truth claims, exist only inside the discursive formation in which they are generated, and this discursive structure is one that is very different from the notions of time and space, of causality, of government used by western legal structures. It therefore is not surprising that truth claims arising from native oral history are not dealt with in the same way as scientific truth claims. Science has none of these difficulties. This may be explained in part by the shared historical origins of law and science as described in Chapter Two. The privileging of scientific discourses in comparison to oral history discourses may thus be at least partially explained by reference to shared cultural and historical origins. This is problematic because it gives both scientific and legal methods of truth determination precisely the same lacuna

²³² Wa, Gisday and Delgam Uukw, *The Spirit in the Land – Statements of the Gitskan and Wet'suwet'en Hereditary Chiefs in the Supreme Court of British Columbia* (Gabriola: Reflections, 1992) at 22-23)

when it comes to native oral history, lacuna caused by the shared assumptions of law and science.

The problem the courts had in admitting and weighting oral history evidence was not that the truth claims themselves were nonsensical. On the contrary they spoke precisely to the point under consideration by the court. The problem lay in the lack of acceptance by the court of the manner in which those truth claims were reached. Ultimately, the conclusions reached by looking at the oral history evidence could not be accepted because conceptions of causality, space, and time are fundamentally different in oral history when compared to legal conceptions. In the true sense of the phrase, oral history represented a discourse incompatible with that of the law.

The solution to this problem that the plaintiffs attempted was to use social science evidence to pull the truth claims made under oral history evidence and bring them within the realm of science, and thus what anthropologists have to say becomes important in the understanding of native discourse. We see here a perception on the part of the plaintiffs that without somehow proving scientifically the validity of native discourse it will have not independent weight, a perception amply supported by the trial decision in *Delgamuikw*. However, this attempt was unsuccessful because of the attacks on the objectivity and rigor of the scientists involved. It is not clear that this would necessarily be the case with all attempts to invoke social science in the aid of land claims disputes, but

one does have the sinking feeling that anthropological evidence in particular may be considered suspect by the courts.

Conclusions

Native oral history discourse is thus qualitatively different from legal discourse, and legal discourse appears to be relatively hostile to accepting oral history discourse as a legitimate generator of truth claims in its own right. It has been argued by Williams that the western legal structures and methods of analysis have been important components in the spread of imperial domination over native peoples in the new world. In Williams' analysis, which also operates from a Foucauldian perspective, the law has operated as an important agent of the imperial powers:

While the colonizing nations of Europe interpreted and applied their presumed mandates in the New World in radically divergent ways, each assumed that law was an appropriate instrument of empire in imposing its particular vision of truth on the American Indian²³³

The *Delgamuukw* case seems to suggest that this process has continued after the time-period discussed in Williams' book, which essentially stretches only into the early twentieth century. We see in the *Delgamuukw* case the clash between substantially different views of knowledge and truth. We can also see in it the nature of law as a form of hegemonic discourse in the Gramscian sense.²³⁴ It is

²³³ Williams at 6

²³⁴ Hall, S. "Gramsci's Relevance for the Study of Race and Ethnicity" in d. Morley and K. H. Chen (eds), *Stuart Hall: Critical Dialogues in Cultural Studies* (London & New York: Routledge, 1996) 411-440 at 416-

hegemonic in the sense that it sets itself up as the ultimate arbiter, ultimately forcing other discursive structures to either conform directly to legal conceptions or to present themselves in a fashion acceptable to the law. It is the latter method that was used by the plaintiffs in the *Delgamuukw* case. Oral history was to be backed up with science, an acceptable form of discourse for the law. Oral history and remembrances of native life were filtered through the science of anthropology in the hopes that scientific conclusions would be more palatable to the court than the raw discourse of oral history itself.

Where, then is native oral history? It clearly is not a privileged form of discourse, by privileged meaning that it is analyzed from within its own context. At trial, it was a form of discourse treated as a very questionable form of evidence. This is clear from the fact that the trial judge held it only usable as corroborative evidence in relation to evidence coming from other sources, which in the context of this case meant scientific evidence. At that level of court, it seems to be a marginalized form of discourse, perhaps even a subjugated discourse.

In his work on the construction of madness Foucault describes madness as a form of discourse, specifically a subjugated discourse. In this work, Foucault attempts to understand the changing place of insanity (he uses the

426; Turpel, Mary Ellen, "Aboriginal Peoples and the Canadian *Charter*: Interpretive Monopolies, Cultural Differences" (1989-1990) 6 C.H.R.Y.B. 3-45 at 45

word mad) in western society.²³⁵ What is relevant for my analysis is not the ultimate medicalization of madness. Medicalization refers to a causal model of what madness is. Of more interest here is Foucault's description of the intervening period when insanity began to be viewed as a discourse of *unreason*. This is not to say that madmen are unreasonable or illogical. Foucault provides clear examples of the sort of logic used by the insane, logic which he describes as similar to that used by "reasonable" people. It is, however, a logic that derives its starting points from conceptions that differ qualitatively from those of who are not insane. This is why he refers to insanity as unreason.

Foucault describes insanity in the context of what he terms "classical" madness, which was the conception of insanity prior to the medicalization of madness as mental illness. "Madness, in the classical sense, does not designate so much a specific change in the mind or in the body, as the existence, under the body's alterations, under the oddity of conduct and conversation, of a *delirious discourse* [author's emphasis]."²³⁶ In this view of madness, the characteristic that defines madness is that it is a mad discourse, it is a discourse which is somehow qualitatively different from the discourses of everybody else, and within which the conception of madness itself is defined. The central difference between these two discourses is that madness is a discourse of

²³⁵ Foucault, 1965

²³⁶ Foucault, 1965 at 99

unreason. Unreason is characterized not as lost reason or skewed reason, but better characterized as reason dazzled.²³⁷ Madness is thus a perceptual problem, in that the mad see things that are not there, do not see things that are, or perhaps nothing at all. It is not the inability to reason, rather the inability to start from the same basis as everybody else. Thus, for example, a person who believes himself already dead will not eat; it is logical yet still an example of unreason.²³⁸ The discourse of the mad, in this formulation, interacts with a discourse *about* the mad. This discourse about the mad is unaccepting of what the mad say because it does not accept their discourse as legitimate, considering it a discourse of unreason.

Oral history evidence is less useful at trial because it is not seen as objectively true. However, the Foucauldian theoretical framework is profoundly skeptical about any notion of absolute or objective truth in the first place. "Objective" truth is thus only a sort of truth, a truth established within particular discourses, primarily western discourses. Since native people through their oral histories cannot produce objective truth in the legal sense, they are for the purposes of legal discourse not reasonable discourses, as they are predicated upon a view of the world not constrained by legal objective reality. In a certain sense there is a parallel between the view taken by the legal discourse of truth to

²³⁷ Foucault, 1965 at 108

²³⁸ Foucault, 1965 at 95

the view Foucault was describing of the discourses of the mad. Native oral history discourse may not be a discourse of unreason, but from the standpoint of legal discourse it is an inherently less reasonable form of discourse than that of science, for example. It is less reasonable than legal or scientific discourse precisely because it does not share the preconceptions shared by scientific and legal discourses. The use of anthropological evidence to move oral history into the scientific realm thus represents an attempt to rationalize oral history in a manner acceptable to legal discourse. This is possible because it makes oral history a subject of scientific inquiry, and moves the requirement of reason away from the discourses of oral history to those of social science.

Scientific discourses, by comparison to legal discourses, are not 'incompatible' discourses, to use Nelkin's phrase. Rather, scientific discourses are fundamentally more compatible with the law than oral history, religion or magical discourses. They become understandable to the courts only within the context of science for it is science and scientific experts that provide the law with the means to understand apparently unreasonable phenomena.

Chapter V: Conclusions

Each of the three main chapters of this thesis has looked at an individual aspect of the interaction between the law of evidence and science. When taken together, they combine to suggest some overall properties of the relationship between science and the law of evidence.

In Chapter II, it was suggested that science and the early law of evidence have a shared genealogy in the development of probability theory and theories of causation, a development that can be traced to the mid-seventeenth century in England but most apparent in the eighteenth century criminal trial. This is not to say that scientific and legal conceptions of truth were or are identical, but rather that they may share certain basic conceptions and that this suggests that it may be these shared conceptions that make scientific truth claims palatable to legal professionals to the exclusion of others.

From there we moved to the development of fingerprint evidence in Chapter III in the late nineteenth and early twentieth century Canada. By looking at the movement of the technique of fingerprinting from a scientific curiosity to a form of social surveillance in a colonial setting, to a form of police record keeping, to a tool used by the police in the solving of crimes, and from there to its use in the courts, we saw how distant fingerprint experts are from their scientific roots. We also saw how fingerprint techniques and the

profession of the fingerprint examiner were specifically developed so that they would be persuasive in the legal context.

Finally, Chapter IV focussed on the contemporary expert witness, a witness almost exclusively defined in the context of scientific expertise. The special place afforded scientific discourses of truth in this context appear to have lead the parties to the *Dalgamukw* case to rely on a 'scientification' of native oral history evidence, although this was not effective at the trial level. The SCC chose the other route and created a special class of evidence to allow the admission of native oral history evidence in the context of land-claims disputes, however this may be problematic because that effectively places oral historians outside the realm of expertise and opens their testimony to evaluation by legal fact-finding means.

We can now return to the questions posed in the Introduction and see if they have been answered. The first question posed asked why scientific discourse provides acceptable truth claims to the courts. The hypothesis that science and the law of evidence share historical origins in the development of probability theory seems to be demonstrable, but this cannot be taken to be a full answer to that question, for it neglects the greater question of the place of science and scientific modes of knowing in modern society at large. However, for the limited purposes of this thesis it seems enough to say that this shared

historical origin might be implicitly referred to in the context of the validation of scientific evidence.

The second question addressed the relationship of scientific modes of knowing to the law of evidence. In the context of fingerprinting, it seems clear that the mechanism by which the scientific oddity that no two fingerprints appear the same developed into a discourse by which individuals may be identified for legal purposes was not direct. Before appearing in the courts fingerprints, were simply the newest of a series of anthropometric techniques used by the police to identify individuals. This suggests that the discourse of fingerprinting that developed in the context of legal procedures operated as a mediating discourse lying between scientific discourses and those of the law. This notion of mediating discourses forms a partial answer to this question, and one that will be addressed at greater length later in this conclusion.

The third question addressed the impacts the 'special place' of science might have on alternative methods of knowledge generation. Although any conclusions derived must be considered very limited because of the focus in Chapter IV on only one case, it seems clear that the closer a methodology is to what might be termed 'hard science' the greater the likelihood of the court's acceptance of that methodology. This remains true within scientific discourse, with social science evidence receiving far more critical scrutiny than

archaeological evidence, but is especially obvious with the non-western discourses of native oral history.

A few additional observations about the history of the law and science are necessary before any larger conclusions can be taken from what has been said already. The first observation is an obvious one: that neither the law of evidence nor science has been stable during the past three hundred years. Indeed, if Chapter Two focussed primarily on the 'birth' of the law of evidence it has neglected its subsequent growth. Second, as science has grown it has also fractured, generating diverse disciplines and modes of knowing within its own structure. Since this study has been focussed on the law it has generally dealt with science as though it were a unified field and indeed it has been deliberately vague on precisely what is meant by the term 'science.' In general the term has meant science in the popular sense, and therefore incorporates as well the technologies that have been derived from science, but it may be useful to split 'experimental science' (for want of a better term) from 'applied science.' True, this presumes a very Popperian view of what science is and thus is quite debatable, but for the purposes of reaching a few general conclusions about the interaction between science and the law of evidence it seems a worthwhile distinction. As a very rough-and-ready distinction then, experimental science refers here to the search for new knowledge and applied science refers to the application of existing scientific knowledge to the solution of problems through

the application of scientific technology. Thus mechanical engineering would be an example of applied science, with physics as its experimental scientific antecedant.

This thesis has attempted to look into the problem of the interaction between scientific and legal modes of knowing. It has asked how the legal process receives scientific knowledge. To do so, it has conceptualized knowledge in a Foucauldian context where knowledge-claims are contextually centered in the discourse that validates them, allowing such a claim to be considered as true only within the discourse that is used to validate it.

However this represents a significant oversimplification. If the law of evidence and science share a conceptual basis in the seventeenth and eighteenth century development of probability theory, this is not to say that these discourses were ever one and the same. While the development of probability theory seems to have been a necessary precondition for the development of the law of evidence it cannot be said to have been a causal factor in the law's subsequent development, at least on the basis of the evidence examined here. The development of complex rules for the admissibility of various forms of evidence in the eighteenth century would seem to suggest that legal modes of reasoning were more important than what might be called scientific modes of reasoning in the development of the law of evidence, even if those rules were ultimately based on probabilistic conceptions. While the law and science may

share a common methodological approach derived from probability theory, they have developed their own approaches.

If the law has not remained constant over the last three hundred years, neither has science. Thomas Kuhn has argued that science has gone through a series of paradigmatic transformations, transformations that amount to broad shifts in worldview, over its history.²³⁹ Kuhn has been broadly criticized,²⁴⁰ but these criticisms do not detract from his notion that science has gone through dramatic changes in its conceptual framework over its history. As well, the complexity of scientific methodologies has increased dramatically since the seventeenth century, making scientific arguments far less understandable to the those not conversant with current methodologies.

Taken together, changes in the law and science since the importation of probability concepts into the law in the seventeenth and eighteenth centuries suggest that their notions of proof, causality, and appropriate evidence have diverged since that time. Science is more complex and less readily understandable. DNA 'fingerprinting' is by its very nature a far more complex technology than that of fingerprinting itself, and one that is far harder to

²³⁹ Kuhn, Thomas S., *The Structure of Scientific Revolutions*, 3rd Ed. (Chicago: University of Chicago Press, 1996)

²⁴⁰ for an overview of these debates in a social science context, see the appendix in Von Eckhardt, Barbra, *What is Cognitive Science?*, (Cambridge: MIT Press, 1995)

explain to judge and jury. In a sense the distance between scientific and legal discourses has widened.

As has been shown here in the case of fingerprints, modes of knowing developed using scientific methodologies do not necessarily enter the legal forum directly from the discourses of experimental science but rather through the intervening discourses of government and policing. Expert witnesses are not necessarily scientists but often technicians whose techniques are validated by science. It may be reasonable to postulate that this is the usual mode of transmission of scientific knowledge to the law. Indeed, the requirements for the demonstration of expertise seem more akin to the demonstration of technical expertise and far from the much more guarded truth-claims made by scientists on the cutting edges of their fields. In this sense, the law does not accept scientific experts but rather those who use techniques developed from science. To use the experimental/applied distinction suggested earlier, all science used in the courts must be applied science.

The term 'applied' presupposes that something, science in this case, is applied to something else, to the solution of some problem. It also seems to presuppose that the subject to which scientific methods are applied be derived from somewhere outside science itself. This is a shifty definition, for scientists like everyone else are subject to the discourses present in society and thus to at least some extent all science must be considered applied, but in the case of the

law the situation is much simpler. All science used in the courtroom is applied to legal problems. If it were not, it would simply be inadmissible, something clearly demonstrated by the basic requirement for relevance in the law of evidence.

The choice of a theoretical framework for any historical or sociological analysis must be appropriate for the scale of the problem being investigated. At the overall level of science or the law, autopoietic theory is reasonable but it is not useful for the examination of the sub-discourses associated with either, even if we accept that they fit the requirements for autopoietic discourse. While it might be sensible to consider science as a whole to be an autopoietic discourse, cell biology alone could not. The same might well be said of state-formation theory. At a more reductionist scale, psychologists may have much to say about the behavior of expert witnesses yet still not address the larger issues of the place of that expert witness in society. Perhaps it is these different scales of analysis that generate the multiple approaches to the problem of the place of science in the law noted by David Nelkin and that inform Mitchell Dean's criticism of the state-formation theorists. In the physical and biological sciences the scale-dependence of theoretical constructs is assumed, and one must ask why this should not be so in the social sciences as well. Therefore, in this thesis, a Foucauldian approach was chosen because it seemed appropriate to the sort of problem being studied and to the scale at which the

analysis took place. Indeed, the analysis presented here can be interpreted in the context of larger theoretical constructions. It is not intended, however, to provide a comprehensive historical analysis of evidence and legal processes in the periods surveyed.

If we accept Teubner's autopoietic hypothesis and consider science and the law to be autopoietic systems, we cannot accept these intervening discourses of policing as autopoietic for they depend upon the justification of scientific and legal discourses for validation. A modern latent fingerprint examiner depends not only on scientific validation of the technique he or she practices but also on legal acceptance of the results. Much the same might be said of any forensic expert whose craft is likely to come into evidence in the future and indeed of the detective who makes use of that expert. These discourses that sit between law and science thus become the focus of both legal and scientific validation for it is ultimately legal discourses that determine the expert status of their members. They are brought into being by legal discourses. As claimed, the law of evidence is the gatekeeper of forms of knowledge brought into courts.

Even if we choose not to accept Teubner's analysis, the discourse of the fingerprint examiner as a developer of truth claims is quite different than that of the scientists for the fingerprint examiner must always point back to science to justify the use of his or her technique. If this is the case, why then separate the art of the fingerprint examiner from science? Scientists, after all, make use of

techniques developed by other scientists without independently validating those techniques themselves. The difference lies in the nature of the fingerprint examiner's work as an expert witness. As an expert witness, the fingerprint examiner must follow legal as well as scientific masters. We can see this in the tremendous pains taken by Scotland Yard to maintain the chain of evidence and eliminate the possibility of human error and in the Cole's analysis of the development of the profession. While scientists wrote the text of the play, the locale of the performance is that of the court, and it is ultimately the court's sensibilities that determine its success or failure. Thus the fingerprint examiner is always an applied scientist who applies techniques derived and known true under scientific discourses to problems determined by legal discourses.

To some extent, this may be true of all expert witnesses, even those whose position in the scientific community is beyond dispute. The expert witness is asked to play a careful balancing game, one that balances legal needs against scientific sensibilities. The current concern over 'junk science' so prevalent in the United States seems to be based upon a perception that when scientists accept too many of the values attached with the adversarial process their value as scientific experts is undermined. This concern seems prevalent in the BCCA ruling in *Dalgamukew* as well, where the weighting of social science research was lowered because of the closeness of the researchers to their subjects in the context of the dispute being litigated.

The precarious position of the expert witness may be becoming more so because of the changes that have occurred in science over the last fifty or sixty years. While this thesis has emphasized the similarities between the law of evidence and scientific discourse, they are certainly not identical and may be drifting further apart. As Kuhn has demonstrated, despite the criticisms his work has received, it is clear that scientific discourse is itself in a state of constant flux and scientific values and methods have changed dramatically since the eighteenth century. Current legal concerns with the admissibility of Bayesian probability figures in the context of DNA evidence seem to demonstrate just how far the increasingly sophisticated use of statistical methods in all aspects of the sciences has gone and just how disconcerting this sort of evidence may be for judges and juries. As causality, the basis of English-style law, becomes increasingly difficult to demonstrate expert witnesses and the courts are placed in an increasingly difficult position. Of course, these problems are greater for social scientists who do not fit the traditional 'hard science' model.

Although this thesis has briefly discussed some contemporary case law, it rests firmly seated at the turn of the twentieth century just as the explosion in scientific knowledge and technique of the twentieth century began to have impact on court proceedings. In the intervening century much has changed and it would be foolish to try and broadly apply any conclusions reached here to the contemporary situation. What it does is suggest that a proper understanding of

the interaction between science and the law is dependent upon an understanding of the discourses of the experts pushed and pulled by scientific and legal conceptions of their roles. If scientific and legal conceptions of truth have been diverging since the eighteenth century and that process is accelerating, the role of the expert will become increasingly problematic. If the early modern period was characterized by a relative closeness between the law of evidence and scientific discourses, the late modern period may be characterized by divergence. In that light, we may see the SCC's decision in *Dalgaard* as a representation of this process, where scientific evidence for the purposes of native land-claims was found to be wanting resulting in the creation of a new category of native oral history evidence.

These, one must hasten to add, are merely speculations and could be the subject of future study. If the conclusions of this thesis are correct and science is received by the courts through mediating technical discourses, then perhaps these discourses themselves should form the basis for future study. This necessitates a focus not on the scale of science and the law as complete discourses in themselves but rather on the particular interaction generated by particular mediating discourses. The scale of historical or sociological study thus becomes smaller in terms of time, space, and the discursive space involved. Although Foucault himself never felt constrained in this fashion, his archaeological approach seems ideally suited to the study of these more

● focussed domains of historical inquiry. This does not mean that larger theories and historical analyses are not important. It does suggest that in considering science in particular as a unitary system we may miss the basis of interaction between it and the legal system.

Bibliography

Primary Sources

Delgamuukw v. British Columbia, [1991] 3 W.W.R. 97 (BCSC)

Delgamuukw v. British Columbia, [1993] 5 W.W.R. 97 (BCCA)

Delgamuukw v. British Columbia, [1997] 3 S.C.R. 1010 (SCC)

Fairweather, J. H., "Correspondence re. the use of fingerprints in Post Office Banks," National Archives of Canada, RG 3 Vol. 648, 1922.

Foster, Edward, "Personal scrapbook of clippings from Foster's career," National Archives of Canada, RG 18 Vol. 1997-1998

Foster, Edward, "Speech," National Archives of Canada, RG 18 Vol.1997-98, 1912

Jungel, Christin, "Letter to the Commissioner, RNWMP," National Archives of Canada, RG 18 Vol. 1997-98/386, 1906.

Lucas, C.P., "Letter to the Colonial Office," National Archives of Canada, RG 25 Vol. 103, 1898

Newcombe, Deputy Minister of Justice, "letter to J.G. Colmer, esq.," National Archives of Canada, RG 25 Vol. 103, 1896.

Primrose, "Correspondence re. the identification of criminals." National Archives of Canada, RG 18 Vol. 359, 1908.

R. v. Abbey, [1982] 2 S.C.R. 24

R. v. Beland, [1987] 2 S.C.R. 398

R. v. Buckingham and Vickers (1943), 86 C.C.C. 76

R. v. Graat (1982), 31 C.R. (3d) 289 at 305 (S.C.C.)

R. v. Marquand, [1993] 4 S.C.R. 223

R. v. Mohan, [1994] 2 S.C.R. 9

R. v. R (*W.D.*) (1994), 35 C.R. (4th) 343 (ONT C.A.)

R. v. *Sophonow*, [1985] M.J. No. 10

R. v. *Terceira*, [1999] S.C.J. No. 74

R. v. *Turner* (1974), 60 Crim. App. R. 80 (Q.B.)

R. v. *Van der Peet*, [1996] 2 S.C.R. 507

RNWMP, Comptroller, "Letter," National Archives of Canada, RG 18 Vol. 1997-98/386, 1906.

Sherwood, A.P., "Letter to Lord Strathcona" National Archives of Canada, RG 25 Vol. 103, 1898

Starnes, Cortlandt, "Letter," National Archives of Canada, RG 25 Vol. 1480, 1927.

Secondary Sources

Allen, C., *The Law of Evidence in Victorian England* (London: Cambridge University Press, 1997)

Baudrillard, Jean, *Forget Foucault*, (New York: Semiotext(e), 1987)

Beattie, J.M., "Scales of Justice: Defence Counsel and the English Criminal Trial in the 18th and 19th Centuries" (1991) 9 *Law and History Review*, 221

Beattie, J.M., *Crime and the Courts in England: 1660-1800*, (Princeton: Princeton University Press, 1986)

Boyle, Christine and David R. Percy. *Contracts: Cases and Commentaries* (5th Ed.) (Scaborough: Carswell, 1994)

Brownhill, H. E., "50 Years of Fingerprinting" (1961) 26(3) *RCMP Quarterly* 155

Campbell, Marjorie Freeman. *A Century of Crime: The Development of Crime Detection Methods in Canada*. (Toronto: McClelland and Stewart, 1970).

Cole, Simon A. "Witnessing Identification: Latent Fingerprinting Evidence and Expert Knowledge." *Social Studies of Science* (1998). 28.5-6

- Dean, Mitchell, *Critical and Effective Histories: Foucault's Methods and Historical Sociology* (New York: Routledge, 1994)
- Dews, Peter, *Logics of Disintegration: Post-Structuralist Thought and the Claims of Critical Theory*, (London: Verso, 1987)
- Foucault, Michel *Madness and Civilization: A History of Insanity in the Age of Reason*, (New York: Random House, 1965)
- Foucault, Michel *The Archaeology of Knowledge*, (London: Routledge, 1972)
- Foucault, Michel, *Discipline & Punish*, Alan Sheridan trans. (New York: Random House, 1977)
- Foucault, Michel, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*, Colin Gordon ed. (Brighton: Harvester, 1981)
- Foucault, Michel, *The History of Sexuality, An Introduction*, Robert Hurley Trans., (New York: Vintage, 1990)
- Gould, Stephen J., *The Mismeasure of Man*, (New York: Norton, 1981)
- Habermas, Jürgen, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*, William Rehg, trans. (Cambridge: MIT Press, 1988)
- Hacking, Ian, *The Taming of Chance*, (London: Cambridge University Press 1990)
- Hacking, Ian, *Rewriting the Soul: Multiple Personality and the Sciences of Memory* (Princeton: Princeton University Press, 1995)
- Hacking, Ian, *The Emergence of Probability*, (London: Cambridge University Press 1975)
- Hall, S. "Gramsci's Relevance for the Study of Race and Ethnicity" in d. Morley and K. H. Chen (eds), *Stuart Hall: Critical Dialogues in Cultural Studies* (London & New York: Routledge, 1996) 411-440.
- Hunt, Alan and G. Wicham, *Foucault and the Law: Towards a New Sociology of Law as Governance*, (London: Pluto Press, 1994)
- Jasanoff, Sheila, "The Eye of Everyman: Witnessing DNA in the Simpson Trial" *Social Studies of Science* (1989) 713-740

- Jasanoff, Sheila, *Science at the Bar: Law, Science, and Technology in America*, (Cambridge: Harvard University Press, 1995)
- Karl Pearson, *The History of Statistics in the 17th and 18th Centuries*, E. S. Pearson Ed., (London: Charles Griffin & Company, 1978)
- Kuhn, Thomas S., *The Structure of Scientific Revolutions*, 3rd Ed. (Chicago: University of Chicago Press, 1996)
- Marquis, Greg, *Policing Canada's Century: A History of the Canadian Association of Chiefs of Police*, (Toronto: University of Toronto Press, 1993).
- Nelkin, David, "A Just Measure of Science," in *Science in Court*, Michael Freeman and Helen Reece eds. (Aldershot: Dartmouth Publishing Company, 1998)
- Osborn, Albert S., *The Problem of Proof*, 2nd Ed. (Newark: Essex Press, 1926)
- Paciocco, D. M. and Lee Stusser, *The Law of Evidence* (Concord: Irwin Law 1996)
- Schum, D. A., *The Evidential foundations of Probabilistic Reasoning* (New York: John Wiley & Sons 1994)
- Senior, Hereward, *Constabulary: The rise of Police Institutions in Britain, the Commonwealth and the United States* (Toronto: Dundurn Press, 1997)
- Shapiro, B. J., *"Beyond Reasonable Doubt" and "Probable Cause"* (Berkeley: University of California Press, 1991)
- Shapiro, B. J., *Probability and Certainty in Seventeenth-Century England* (Princeton: Princeton University Press, 1983)
- Teubner, Gunther. "Introduction to Autopoietic Law" in Gunther Teubner Ed. *Autopoietic Law: A New Approach to Law and Society* (New York: Walter de Gruyter, 1988)
- Thayer, James Bradley, *A Preliminary Treatise on Evidence at the Common Law*, (Boston: Little, Brown, and Company, 1896), reprinted (South Hackensack: Rothman Reprints, 1969)
- Turpel, Mary Ellen, "Aboriginal Peoples and the Canadian *Charter*: Interpretive Monopolies, Cultural Differences" (1989-1990) 6 C.H.R.Y.B. 3-45.

Wa, Gisday and Delgam Uukw, *The Spirit in the Land – Statements of the Gitksan and Wet'suwet'en Hereditary Chiefs in the Supreme Court of British Columbia* (Gabriola: Reflections, 1992)

Weber, Max, *Max Weber on Law in Economy and Society*. Max Rheinstein, ed. (Cambridge: Harvard University Press, 1954)

Williams Jr., Robert A. *The American Indian in Western Legal Thought: The Discourses of Conquest* (Oxford: Oxford University Press, 1990)

Von Ekhardt, Barbra, *What is Cognitive Science?*, (Cambridge: MIT Press, 1995)