

“The End of The Future”

*The Development of the South African Chemical and Biological
Weapons Research Programme, 1981-1991*

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declaration

I, Julian Brown, hereby declare the content of this thesis is entirely my own original work.

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Abstract

This thesis is an examination of the relationship between the institutional and practical workings of the late Apartheid state's Chemical and Biological Weapons Research Programme, code-named Project Coast. It is written against the background of the changing nature of the South African state in that period, and presents a partial picture of that change. The greatest part of the thesis, however, is a history of the Research Programme itself. The Programme's institutional structure was developed around the charismatic figure of Dr Wouter Basson: following Weberian arguments, it is clear that his charisma was used, within the bureaucratic structure of the Programme, to legitimate the scientific research projects undertaken. Two of these projects are examined in the body of this thesis: the first of these is an attempt to develop a new form of tear gas, the second is the attempt to develop a new form of contraceptive. The animating ideologies of these research projects are compared to each other, and to the supposedly hegemonic ideologies of the changing state, revealing discrepancies between these grand structures and their local workings. The importance of Basson's charismatic authority is emphasised by the rapid dissolution of Project Coast following his withdrawal from his leadership position at the end of the 1980s. By the end of the thesis, then, it seems clear that, within the legitimating aura of Basson's authority, the scientists at Project Coast developed a set of racial and political ideologies that more little to no substantive relationship to the seemingly hegemonic ideologies of the late Apartheid state, of which Project Coast was an organ.

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Introduction

The Productive Uses of Violence

This thesis is an exploration of the late Apartheid state's chemical and biological weapons research programme. Despite its recent visibility in both the national and international press, the programme -- code-named "Project Coast" -- has not attracted a great deal of close attention. Instead, the programme's production, both intellectual and material, has been obscured by a public fascination with the "madness" of the research work conducted within its laboratories. The appeal of "Apartheid's Mad Scientists" has also worked to conceal the institutional structure of the programme by presenting its head, Dr Wouter Basson, as having single-handedly masterminded the programme's operations.¹ And while some scholars have attempted to redress the simplicity of this portrait, even their work does not go far enough into the programme's operations to explain either how it worked, or why it was begun in the first place.² These two questions structure my exploration of the programme in this thesis.

¹ The phrase comes from the title of a website that compiles links to many of the published articles on Project Coast, hosted at [http://www.geocities.com/project_coast/index.html] A selection of the newspaper articles I refer to would include: A. Duffy, "'Peace' scientist's shady past," *Electronic Mail and Guardian*, 14 November 1997; G. Evans, "The man with the deadly past," *Mail and Guardian*, 28 August 1998; P. Thornycroft and S. Sole, "SADF used chimps in project to curb black fertility," *The Sunday Independent*, 19 April 1998; B. Mabandla, "Sucking out the poison of apartheid science," *The Sunday Independent*, 21 June 1998.

² I return to these works later in this Introduction, pp 11-15.

My focus is on the connections between the workings of the late Apartheid state and the workings of its chemical and biological weapons research programme. I am concerned with the relationship between the institutional order of the research programme and the institutional order of the late Apartheid state. This order is in part expressed through the practice of scientific research as conducted within Project Coast. I intend to argue that both the institutional order of the research programme, and the practice of scientific research as it was conducted within its laboratories, derived much of their specific nature from the particular historical circumstances of the programme's founding and operation. The changes in the structure of the Apartheid state that occurred through the period in which Project Coast functioned helped to determine the nature of its institutional order, research practices, and physical products.

More broadly, then, the exploration of the chemical and biological weapons research programme that I am undertaking in this thesis must include an exploration of the particular nature of the South African state between 1978 and 1991. The first of these dates was the year in which Project Coast was first proposed. The second date that frames this thesis takes its significance from the that fact that 1991 was the year in which Project Coast's institutions were finally separated from those of the South African Defence Force. 1978 is also the year in which PW Botha replaced BJ Vorster as the country's Prime Minister, and 1991 is also the year in which Botha's successor, FW de Klerk, began to conduct serious negotiations with the previously banned black liberation movements, the African National Congress, Pan Africanist Congress, and others. These years, the years that bracket the operations of Project Coast, also bracket some of the

most violent years in South African history -- six of which were spent in a State of National Emergency. The relationship between this bloody context and the institutional operation of the Apartheid state thus lies behind my study of Project Coast in this thesis.

This work builds upon the foundations laid by my previous dissertation, a historiographical analysis of the ways in which various sources of historical production had confronted the role of violence in the formation of the nation-state.³ In that work I juxtaposed pieces of public and political history (such as the statements of the African National Congress that the Apartheid state was influenced by Nazi Germany, and the attempt by the Truth and Reconciliation Commission to produce an equitable history of the country's transition from Apartheid) beside the writings of professionalised historians, both liberal and radical. Violence -- as a historical problem, as a political problem, as a means of both enforcing and resisting state power -- was absent as a serious object of historical study.⁴ And yet it saturated the history produced through political statements, court documents, and Truth Commission's hearings.

At the time, I attempted to account for this discrepancy through identifying the pivotal moment at which the two histories finally diverged: the moment soon after the Sharpeville Massacre of 1960 in which Leonard Thompson, amongst others, chose to

³ Julian Brown, "South African Historiography and the Representation of Violence, 1960-2000." Unpublished BA(Hons) Dissertation. (Historical Studies, University of Natal, Durban: 2000)

⁴ An exception to this rule remains a Special Issue of the *Journal of Southern African Studies*: W. Beinart, (ed) *Political and Collective Violence in South Africa*, *JSAS* (18/1: 1992) See also Keith Breckenridge, "The Allure of Violence: Men, Race and Masculinity of the South African Goldmines, 1900-1950," *JSAS* (24/4: 1998) Despite these and other exceptions, the general historiographical rule remains unchanged for the period after 1960.

reject completely the form of history associated with Afrikaner Nationalism.⁵ This was the form of history taught at school throughout the period of Apartheid governance, and it was also the form of history adopted by the liberation movements in exile when they attempted to produce their own oppositional histories. In place of its grand narratives of heroism and struggle, of sacrifice and vengeance, Thompson and the other liberal historians associated with his *Oxford History of South Africa* placed anthropological narratives, cultural accounts, and the archaeological history of the deep past at the centre of South African history.⁶ The historical movement that succeeded this, influenced by Marxism, replaced these terms with economic and social analysis but was either unable or unwilling to break with the form of history -- objective, scientific, and rational -- pioneered by liberal historians.

I argued that this process ultimately resulted in a rejection of the political functions of historical narrative that, in turn, resulted in a growing chasm between the concerns of South African society and those of South African historians. The rejection was in part explained by the lack of sophistication in secondary school history teaching, much lamented by professional historians in the 1980s and 1990s. This lack was also in part the explanation for the absence of the discussion of violence in history writing. And while a certain distance from political concerns might not necessarily be a flaw in history writing, the absence of any serious engagement with what the Truth Commission's investigations had revealed as the single most pervasive aspect of the Apartheid state in

⁵ Leonard Thompson, "Afrikaner Nationalist Historiography and the Policy of Apartheid," in the *Journal of African History* (1962:3) stands out as the clearest statement of this rejection.

⁶ Leonard Thompson and Monica Wilson (eds) *The Oxford History of South Africa*. 2 volumes. (Oxford University Press, Oxford: 1969, 1971)

the period under my study, was clearly a crippling problem. The conclusion of my dissertation then called for a politically conscious history, produced from within the academy as well as without, that dealt squarely with the violence that saturated -- and continued to saturate -- South Africa.

When I began work on this thesis this injunction was fresh in my mind. Through my readings of the Truth Commission's various hearings -- the Human Rights Violation Hearings, also called the "Victims' Hearings" and the Amnesty Hearings in particular -- I came to see violence as more than merely a political problem. It was also the medium through which the state communicated with its subjects. The authority of pain inflicted upon an individual's body is absolute in a way that a state's discursive authority never can be: relying heavily on works by Elaine Scarry and Allen Feldman, I argued in my earlier dissertation that the Apartheid state attempted to use the absolute authority conveyed by violence to buttress its own failing bureaucratic authority.⁷ But violence, as with power in Foucault's analysis, is not as easily co-opted.⁸ "The very act of violence invests the body with agency," according to Feldman, and this agency could be used against the state's attempts to claim absolute authority, and absolute agency.⁹ One only needs to think of the two hooks at the ends of Father Michael Lapsley's arms -- an iconic image of the Truth Commission's hearings -- to realise the political force such a

⁷ Elaine Scarry, *The Body in Pain: The Making and Unmaking of the World*. (Oxford University Press, Oxford: 1985) and Allen Feldman, *Formations of Violence: The Narrative of the Body and Political Terror in Northern Ireland*. (University of Chicago Press, Chicago: 1991)

⁸ Of Michel Foucault's many relevant works two perhaps stand out here: *Discipline and Punish: The Birth of the Prison*, translated by Alan Sheridan (Penguin, Harmondsworth: 1977) and *The History of Sexuality, vol. 1: An Introduction*, translated by Robert Hurley (Penguin, Harmondsworth: 1978) The third volume of the *Essential Works of Foucault, 1954-1984, vol. 3: Power*, edited by James D. Faubion (Penguin: Harmondsworth, 2000) is an important source.

⁹ Feldman, *Formations of Violence*, pp 7.

reclamation of agency can hold. In my attempt to begin to write a history that could address that struggle for agency through the medium of violence, I returned to the Truth Commission's enormous compendium of history and sifted through it for a case to study.

The Commission's Special Hearing into Chemical and Biological Warfare seemed to provide such a case. It provided a clear example of the Apartheid state attempting to develop a set of technologies of violence that could only be used by its own forces. Unlike rifles, for example, sophisticated chemical weapons could not easily be operated or stolen by the state's opponents within the country's townships. It also provided an example of the way in which the state's use of violence failed -- chemical and biological weapons unlike rifles, electric shock devices, hand grenades and so on, were not, in the end, used by the state in any meaningful way. In fact, the only thing missing from this case study when I reviewed the original 3000-plus pages of transcribed testimony was a clear example of how the subjects of such violence could co-opt its scars to mark their own agency. At the time, I thought that this problem would be surmountable.

It was not. Instead, my original plan for this thesis has had to come to terms with this central absence: this thesis could not be about the way in which violence was used as a medium of political communication between the state and its subjects. Instead the thesis has come to be about the way in which the state itself has accommodated the practice of violence in the form of a chemical and biological weapons research programme. The subjects of that programme were entirely imagined -- by the state, the

programme's administrators, and the programme's scientists -- and never fully actualised. As such, the imagined subjects of the use of chemical and biological weapons were never able to co-opt that use in the service of their own agency. The ways in which they could have been able to do so must remain, for now at least, as much within my own imagination as their very existence was within the imagination of those who worked for Project Coast.

This has necessitated a move in my own work away from the writing of a history influenced by Feldman's anthropology and Scarry's psychology, to the writing of a history more influenced by the sociology of state institutions. The limits within which this thesis was constructed, and the final conclusions which it draws, however, are both derived from my earlier -- and continuing -- interest in the productive uses of violence within South Africa's history. Even the sociology that I use in the course of this thesis is limited by my own working history: most of the sociology used in this thesis was either derived from, or discovered in, my critical readings of other South African histories.

Of the works I read, the two that have had the most influence on this thesis have been Deborah Posel's *The Making of Apartheid 1948-1961* and Dan O'Meara's *Forty Lost Years*.¹⁰ Both of these works make certain use of sociologies to articulate and texture their histories of the Apartheid state. Each approaches that study of the state from different perspectives, which are perhaps reflected best in the different debts each owes to classical sociology. For O'Meara, this debt is perhaps most significantly owed to a

tradition of Marxist sociology that places social interactions within an economic framework. The changes in the economy that occurred during the period of his study stand out as the most significant factors in his close-grained portrait of the internal politics of the National Party, the party of governance in the Apartheid state. The internal politics of the Party, and the external politics of the state that it led, are both embedded in an economic framework and in class conflict. While I accept much of his analysis, his lead is not followed in this thesis.

Instead, much of the direct inspiration for the path that I tread in this thesis comes from Posel's study of the workings of the institutions that made up the Apartheid state. In her book she examines the way in which complex debates (shaped by the political economy of the day, but not determined by this) within and around the normative ideals of Afrikaner Nationalist ideology powerfully influenced the way in which the new institutions of the Apartheid state came to be structured. She juxtaposes ideal structures next to actual structures and attempts to explain both the extent to which they diverged from each other, and the extent to which they in fact converged. She ends her book with the conclusion that by 1961 the early Apartheid state had completed the task Afrikaner Nationalism had set it and had put into place the institutions that would form the foundations for the Grand Apartheid state. After 1961, the first phase of Apartheid was over and its second phase was beginning. That second phase, continuing to be defined by the way in which it structured and operated its bureaucratic institutions, has been the

¹⁰ Deborah Posel, *The making of apartheid, 1948-1961: conflict and compromise* (Clarendon Press, Oxford: 1991) and Dan O'Meara, *Forty Lost Years: The Apartheid State and the Politics of the National Party, 1948-1994* (Ohio University Press, Cleveland: 1998)

focus of several of her more recent articles.¹¹ Many of the assumptions that underlie her analyses in these works, and in mine by extension, are derived from that of Max Weber.

Across a range of works, Weber attempted to meld together a form of the history of ideas with a sociology of institutions to create a history of the ideas that influence the ways in which a social group, institution, or community structured itself. His studies ranged across the globe and across history, but the body of his work that is most relevant to this thesis is his study of the ideals inspiring modern institutional structures.¹² In this body of work he traced the ideological roots of these institutions to the transformation in ethics and economy that occurred during the Protestant Reformation in Europe during the sixteenth and seventeenth centuries. The ideal work ethic that emerged from this process was concerned with the articulation of a scientific rationality, economy, and order. The ideal institutional expression of this ethic was the modern bureaucracy: rationalised, de-personalised, and thus incorruptible.¹³ This faceless bureaucracy was only an ideological construct, an “ideal-type” expressed through the religious and political discourses of the day. Nonetheless, it was through striving to achieve that ideal that the real, imperfect, institutions found their actual structures. In Posel’s work, the Apartheid state’s quest

¹¹ Deborah Posel, “Whiteness and power in the South African civil service: Paradoxes of the South African state,” *Journal of Southern African Studies* (25, 1: 1999) and Deborah Posel, “A mania for measurement: statistics and statecraft in the transition to apartheid,” in Saul Dubow (ed) *Science and society in southern Africa* (Manchester University Press, Manchester: 2000)

¹² Weber’s works diverge in their interests and concerns, although all derive from the same basic principles of research. His work on modernity and modern institutions can be found in several sites. The ones that I have used for this thesis are: Weber, *The Protestant Ethic and the Spirit of Capitalism*, translated by Talcott Parsons. (Allen and Unwin, London: 1930) Also: Weber, *From Max Weber: Essays in Sociology*, translated by A.M. Henderson and Talcott Parsons, and edited by Talcott Parsons. (Oxford University Press, Oxford: 1947) And: Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt. (University of Chicago Press, Chicago: 1968)

¹³ For a very different history of how impersonality and incorruptibility came to define a certain kind of political modernity, see Michael Warner’s *The Letters of the Republic: Publication and the Public Sphere in Eighteenth Century America*. (Harvard University Press, Cambridge: 1990)

towards an ideological ideal type of state structure helps define the nature of the Apartheid state's institutional development. It is this part of Weber's historical sociology that also influences the way in which I attempt to explain the Apartheid state's chemical and biological research programme's institutional structures.

But the introduction of a specifically scientific, researching, institution into a study of the state's development requires a second sources of ideas -- ideas which were expressed in Foucault's brief examination of the discursive history that shaped the practices of modern governmental power.¹⁴ To Weber's analysis of the ideological role of rationality in creating the modern bureaucratic ideal, Foucault added an analysis of the role played by the ideologically scientific practice of gathering information through questionnaires, censuses, statistics, and measurements. This information was used to constitute the new object upon which the modern state could act: the population. To the traditional objects of state power, territory and economy, the modern practice of statecraft added population; and the distinct stated purpose of the modern state was to serve the ends of this same population. Those ends were defined through the collection and collation of information by the state -- in its questionnaires and censuses. The ends were to be reached through the bureaucratic apparatus of the modern state, such as the population control bureau.

My analysis of both the Apartheid state and that state's chemical and biological weapons research programme is thus anchored in the space formed at the nexus of

¹⁴ Michel Foucault, "Governmentality" in *Essential Works*, vol. 3: *Power* (1978) pp 201-222. See also G. Burchell *et al* (eds) *The Foucault Effect* (University of Chicago Press, Chicago: 1991)

Foucault and Weber's two descriptions of the ideals of modern state practice. Posel has gone the furthest of any South African historian in addressing these issues, but my research differs from hers in several ways, the most pressing of which is the most obvious: even her more recent articles do not extend beyond the end of the 1960s and the beginning of the 1970s. My work begins in the middle of the 1970s and continues up until the early parts of the 1990s. It begins where Posel's analysis ends -- and when the state which she describes begins to undergo another major shift, from what Posel terms Grand Apartheid to what I have termed late Apartheid. To explain the significance of this shift, a brief narrative overview of its historical context, and contingencies, is required.

The Apartheid state in 1961 was the product of thirteen years of internal conflict and compromise between the National Party government and the institutional legacy of the state bureaucracy that had developed in the decades after the 1910 Act of Union.¹⁵ The exclusivist essentialism of Afrikaner Nationalist rhetoric had come to an accommodation with the impersonal and impartial rhetoric of scientific governance that had structured the bureaucratic state before 1948. One result of this accommodation was a state in which the boundary between bureaucracy and government was fatally blurred: most of the civil servants were Afrikaans-speakers who had been appointed by the National Party through a form of affirmative action and who owed their allegiances not to the bureaucracy but to the government itself. A second result was a state practice that bound together the obsessions of both Afrikaner Nationalism and modernist bureaucracy:

¹⁵ William Beinart, *Twentieth Century South Africa* (Oxford University Press, Oxford: second edition, 2001) is a masterly summary of the century's events.

the subjects of the state's power were essentialised populations, defined statistically. The Apartheid state's public rhetoric defined its own right to govern through its concern for the welfare, not of the country's singular population, but of its many, various, and separate populations. All of which were scientifically, statistically, defined.¹⁶

The mechanism for the collection and interpretation of this self-consciously "scientific" information was the Department of Native Affairs, which later gave birth to the Department of Bantu Administration and Development, originally under the political leadership of W.M. Eiselen and the bureaucratic leadership of Hendrik Verwoerd. This department was responsible for collecting and collating data on all non-white subjects of the South African state. It was through the interpretations of this data offered by the Department that the state claimed both to identify the boundaries of its various subject populations, and also to identify the welfare issues that animated each of these populations: whether it was a separate form of education, development, or geographical location. It goes almost without saying that these separate welfare needs were defined by the state's practice of information collection rather than by the expressed desires of the population as a whole: the way in which this statistical data was collected and collated served to obscure the ideological politics behind the state's acts.¹⁷

After Verwoerd graduated from heading the Department of Native Affairs to becoming the Prime Minister of the country in 1958, the Department's statistical practice

¹⁶ Posel, *The Making of Apartheid*, is the definitive work on this period.

¹⁷ See Posel, "A Mania for Measurement," as well as Keith Breckenridge, "From Hubris to Chaos: the makings of the Dompas and the end of documentary government" Unpublished seminar paper (University

became ever more important in the running of the country. Indeed, it became the single most important pillar of Grand Apartheid: the ideological attempt to segregate the many populations of the country, defined through racial, ethnic, and linguistic measurements, from each other. Grand Apartheid rested on a rhetoric of “separate development” which in turn depended on a modernist rhetoric of scientific information, and on the modern convention of the population, and its welfare, as the object of the state’s acts of power. It is arguable that, despite the presence of this discursive foundation, Verwoerd’s Grand Apartheid would not have been practicable without the economic boom that buoyed the South African state in the 1960s.¹⁸ Regardless, this was the way in which the state rationalised its own exercises of power for as long as that boom continued, even after the assassination of Verwoerd in 1968 and the resultant succession of B.J. Vorster.

By the middle of the next decade, however, that economic boom was deflating. At the same time, the South African trade union movement began to spread to the black majority population, achieving a degree of public political mobilisation unheard of since the state’s violent repression of the black liberation movements in 1961. One of the first clear signs of the increasing militancy of this movement were the Durban Strikes in 1973 which sufficiently disturbed confidence the Apartheid state at a time of economic instability. In 1975 the Portuguese colonies of Mozambique and Angola achieved a sudden independence, bringing two black socialist governments onto the borders of the

of Natal, Durban: April 2002) Also: Heribert Adam, *Modernising Racial Domination* (University of California Press, Berkeley: 1972)

¹⁸ Dan O’Meara, *Forty Lost Years*, covers this period clearly.

South African state and its protectorate, South West Africa (Namibia).¹⁹ And in 1976 school students took to the streets of Soweto in protest against a particular aspect of the state's separate education policy. The South African Defence Force had to be called in to control this Uprising, leading to the use of live ammunition against massed crowds. Within the space of three years the economic, military, and political context within which the Apartheid state had operated had changed almost beyond recognition. More than any other factor, however, the Soweto Uprising had utterly discredited the rhetoric of separate development, and thus of the scientific management of populations, within the National Party itself. A succession battle soon followed. In 1978 Vorster lost the battle.²⁰

His successor, P.W. Botha, had been Minister of Defence in the last years of Vorster's government and brought his affinity with the state's military institutions to his administration. The immediate effect of this was a new rhetoric of statecraft. The self-proclaimed responsibility of the state was no longer the welfare of its various populations, but rather their protection against a "Total Onslaught"; its means of ensuring its responsibility was no longer a policy of separate development, but a "Total Strategy." If the Department of Native Affairs, throughout its various name changes, had been the definitive institution of Verwoerd's Apartheid state, the South African Defence Force now became the definitive institution of Botha's Apartheid state, what I have chosen to call the "late Apartheid state." Its statecraft was no longer that of a scientific

¹⁹ Robert M. Price, *The Apartheid State in Crisis: Political Transformation in South Africa, 1975-1990* (Oxford University Press, Oxford: 1991) opens with a compelling summaries of these events. See also O'Meara, *Forty Lost Years*, for the impact of these events on the National Party itself, as well as for details of the "Information Scandal" and the internal power struggle.

²⁰ Much of this is covered in O'Meara, *Forty Lost Years*.

bureaucracy. It now derived its rhetorical language and institutional structure from that of the military.²¹

An immediate effect of this shift in institutional orders was the centralisation of state power into a strong executive analogous to the General Staff of the Defence Force. By 1983 Botha had transformed the constitutional order of the government, as well as that of the state bureaucracy, by replacing the position of Prime Minister with a far stronger executive position, that of State President. His Cabinet also came to hold an authority unaccountable to the Parliament -- which itself was constitutionally weakened through the creation of a Tri-Cameral Parliament, an uneasy compromise order that attempted to co-opt the Indian and Coloured populations of the country by granting them each a separate franchise. In addition to these constitutional changes, Botha also instituted a State Security Council that reported only to him, as the State President. This Council was not accountable to any other body, and co-ordinated the use of the combined forces of the South African Police and South African Defence Force to combat unrest and insurrections within the country. There was a perceptible need for such an institution: the years between 1976 and 1989 were the bloodiest years of the Apartheid period as one community after another revolted against the state's authority. Each insurrection was suppressed, but with increasing difficulty. This instability and insecurity defined the late Apartheid state during its period of operations, the long 1980s.

²¹ Jacklyn Cock and Laurie Nathan (eds) *War and Society: The Militarisation of South Africa* (David Philip, Cape Town: 1989) describes the development of this rhetoric across several spheres.

It was during this transformation in the nature of the Apartheid state that the chemical and biological weapons research programme was first proposed, in 1978. It was institutionalised in 1981, began operations the next year, and continued to function throughout the 1980s. It reached its end in 1991, after the policies of late Apartheid had failed to prevent the necessity of a negotiated transition of power away from the National Party and to the previously banned black liberation movements. Project Coast's history places it firmly within the ambit of Botha's Security State, as does its institutional location within the South African Defence Force itself. But it would be a mistake to thus assume that the research programme's institutional order simply followed that of Botha's state.

There is a certain inertia built into institutional orders: as the Afrikaner Nationalist ideals of the early National Party government had to come to an accommodation with the modernist bureaucracies of the previous state order, so too did the militarist ideals of the late Apartheid state have to come to an accommodation with the bureaucracy of the previous order of Grand Apartheid. I argue in this thesis that it was the tensions generated by this process of institutional accommodation that drove Project Coast.

But this, or any other similarly detailed institutional history is missing from the two major works about the South African chemical and biological weapons research programme, both published recently, as well as from the growing body of works that use the programme as an example within a broader encapsulation, either of global chemical and biological warfare or of the period of Apartheid power. The result, for all these

works, has been that none of them have been able to provide an explanation either for the research programme's existence, or for the form which it took. Each of these works, however, reaches that point in its own way. Some examples may make this clearer.

Tom Mangold and Jeff Goldberg's *Plague Warriors* can stand as an example of the kind of work that attempts to describe the South African chemical and biological weapons research programme in the context of other such twentieth century programmes.²² It is also the book with the largest proportion of its length devoted to the programme. Its flaw -- beyond its lack of access to resources, and uncritical acceptance of the description given to them by its military Project Officer, Dr Wouter Basson -- lies in its inability to use the array of material gathered to contextualise the South African programme, either with the country's history or with the history of chemical and biological warfare. This results in a description of Project Coast as simultaneously threatening and unfathomable. The book is thus of use more as an early example of the historiography of the programme than as a history, explanation, or accurate depiction of its operations.

A parallel description would hold for *An Ambulance of The Wrong Colour*, by Laurel Baldwin-Ragaven *et al*, which locates its, far briefer, discussion of the programme within a broader study of medicine and medical research in Apartheid South Africa.²³ Like Mangold and Goldberg's work, the few pages of analysis are based almost entirely

²² Tom Mangold and Jeff Goldberg, *Plague Warriors: A True Story of Biological Warfare* (St Martin's Press, New York: 2000)

on newspaper articles contemporary with the Truth Commission's Special Hearing into Chemical and Biological Warfare. In itself this is not particularly damning, but in a book constructed out of the authors' submission to the Commission's Special Hearing into the Health Profession, the thinness of this section stands out. Similarly to that in *Plague Warriors*, the discussion of Project Coast seems grafted onto an otherwise compelling and detailed argument -- a graft that only serves to again emphasise the programme's exceptionality and to further de-contextualise and de-historicise its actual operations.

Neither of the two works that engage more seriously with the weapons research programme's operation fall into these traps, if only because both works are far more firmly grounded in the available primary sources. Stephen Burgess and Helen Purkitt's monograph, *The Rollback of South Africa's Chemical and Biological Warfare Programme*, relies heavily on interviews conducted by the authors with various senior members of the South African Defence Force.²⁴ Their access to these sources was undoubtedly eased by their institutional affiliations with the US Air Force and Navy, respectively, and with the clearly limited frame of their research: despite a brief account of Project Coast's foundation, the monograph is almost entirely focussed on analysing the way in which the Project was dismantled after the beginning of political negotiations. For this period, between 1990 and 1994, this monograph is superb: closely-researched, clearly-argued, and exhaustive. It describes the process by which the international political community began to express its belief that the research conducted by Project

²³ Laurel Baldwin-Ragaven, Jeanelle de Gruchy and Leslie London, *An Ambulance of the Wrong Colour: Health Professionals, Human Rights, and Ethics in South Africa*. (University of Cape Town Press, Cape Town: 1999) pp 125-129 in particular.

Coast could be distributed to dangerous states -- most notably, Gaddafi's Libya -- and that the country's transitional state should control the possibility of contravening its proliferation agreements by closing the programme. The role of the Defence Force in keeping this process quiet, and in brokering between the remains of the late Apartheid state and the newer African National Congress-led government, is closely studied by the two authors. The study of how these institutions distanced themselves from their research programme is fascinating, and revealing of many tensions underlying the public face of the transition to democratic government. Nonetheless, it does not speak to the actual operations of the research programme, nor indeed to the motives of the state for continuing it through the 1980s.

A similar absence bedevils the other major work published on Project Coast, Marlene Burger and Chandré Gould's *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme*.²⁵ Despite the exceptional thickness of the information presented in their book, derived both from the authors' close relations with the Truth Commission's investigations and daily attendance at Wouter Basson's criminal trial, the interpretation of this information is distorted by the authors' tight focus on the way in which that information was made public. In other words, the large quantity of information that the authors have collected is rendered uninterpretable through their organisational scheme: their book becomes a chronicle of their discovery of the existence and then extent of Project Coast rather than a history of the programme

²⁴ Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme*. (USAF Counterproliferation Centre, Maxwell Air Base, Alabama: 2001)

²⁵ Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme*. (Zebra Press, Cape Town: 2002)

itself. This criticism should not be allowed to disguise the richness of the book, the depth of information gathered, or the intelligence of the authors' critiques of both the Truth Commission's Special Hearing and Basson's criminal trial: for this, the period after the rollback of Project Coast examined in Burgess and Purkitt's monograph, the book is indispensable. There is no better account of these events. But, despite the presence of enough data to answer these questions, it is not an account of how the state's chemical and biological weapons research programme came to be structured as part of the military, how it operated through the 1980s, or whether it ultimately failed or succeeded. It is a rich source, and an exciting book, but it does not attempt to explain Project Coast.

Without a sense of the changing history of the Apartheid state, and without a close examination of the way in which the state and the programme interacted through the period of Project Coast's operations, none of these works can explain either the foundations or the continuance of the research programme. When they do attempt to do so it is by accepting the self-serving explanations given by the scientists and administrators of the research programme in their own defence: that they were working within the context of the Total Onslaught, to protect their nation. As even the brief historical overview I have presented above shows, this explanation is deceptively simple.

These quick-fire summaries of the other work conducted on Project Coast are perhaps more useful in illuminating the areas of my own interest than in illustrating the breadth of interest embodied in these books. The point of difference between my readings of these works, and the readings of the programme that they provide, can be

summed up in a semantic shift: from the “chemical and biological warfare programme” that inhabits the titles and subtitles of both of the two major books on Project Coast to the “chemical and biological weapons research programme” that inhabits my own title.

This difference in focus is, on my part at least, premised on two observations: the first being that, despite its institutional base within the armed forces, Project Coast was not in fact concerned with “warfare”, the practice of conducting armed engagements. Instead, it was concerned with chemical and biological weapons, discursively stripped of their utility, if not ideological purpose. For the scientists and administrators of Project Coast, the ways in which the weapons that they were developing were to be used was -- if not exactly irrelevant -- somebody else’s department. Bureaucratic divisions were eagerly embraced by these scientists and administrators and, whatever the ethical status of such a stance, their refusal to consider the practical uses of their work makes it difficult to describe Project Coast as a “warfare programme” -- because it was not. It was a weapons programme.

And, more precisely, a weapons “research” programme. This is the second observation that underlies the particular nomenclature I have chosen: that for all its rhetoric of weapons production, very few chemical or biological weapons were actually produced. Instead, the isolation of the programme from the international history of chemical and biological weapons research meant that the programme’s scientists had to spend the vast majority of their time re-inventing the wheel: re-developing older techniques of weapons production in addition to attempt to create new forms of those

weapons. Project Coast was thus in fact organised around the exigencies of research, rather than those of a factory-like production line. The dissonance between this necessity and the ambitions of the Defence Force is therefore a productive force for the analysis of the Apartheid state's chemical and biological weapons research programme.

Together with the argument outlined at the beginning of this introduction then, these two observations underlie the structure and focus of my attempt to study that weapons research programme. As with the overall argument, these observations will be fleshed out and illustrated in the body of this thesis. It is sufficient to assert here that they are essential to understanding the difference between my argument and those that are put forward in either Burgess and Purkitt's monograph or Burger and Gould's book.

The first chapter of this thesis therefore begins with an account of the founding of Project Coast and an examination of the ways in which its founders, both those from within the South African Defence Force's military structures and those recruited for the research programme from civilian and academic institutions, sought to explain that act of founding to the Truth and Reconciliation Commission during its Special Hearing into Chemical and Biological Warfare. I propose an unusual explanation for the form that the weapons research programme took, and attempt to suggest how that form reflected the growing contradictions in the institutional structures of the late Apartheid state.

Chapter Two takes up these contradictions, and examines them through a closer focus on a particular part of the Project Coast's institutional apparatus: the chemical

weapons research conducted at the Delta-G Scientific laboratories, a nominally-independent front company for the military's research programme. Within the confines of that institution, I study a single research project in depth, that aimed at creating a new form of tear gas. My intention in this study is to show the ways in which the scientific practice of Project Coast's scientists defined the political implications of their research.

Chapter Three, in turn, picks up these same questions and transplants them into a slightly different context: the biological weapons research conducted on the premises of Roodeplaas Research Laboratories, another military front company set up for Project Coast's convenience. The particular research project that I examine in this chapter was concerned with the creation of a new form of contraceptive, one that would operate like a vaccination. The implicit subjects of this research are expanded upon, and then compared with those defined through the research examined in the previous chapter.

The fourth chapter extracts common threads from the two preceding chapters. The core of this commonality is a temporal coincidence: within the space of six months in the middle of the 1980s both front companies underwent a major institutional shift, a managerial reorganisation that was followed by a decline in the research practices studied in the two preceding chapters. To explain the impact of these institutional changes, I return to the explanation for the original structures offered in the first chapter.

In conclusion, then, I return to the arguments offered in this introduction in the light of the primary research presented in the body of this thesis and propose avenues for further research that could bind this work into the broader tapestry of my research.

Chapter One

The Formation Of Project Coast

In the Introduction to this thesis, I argued that the institutional structure of Project Coast was a product of the period during which the entrenched bureaucratic modernism of the grand Apartheid state was beginning to make way for the increasing militarisation of the late Apartheid state; the programme began as this process began, and ended as the state began to mutate into the contemporary post-Apartheid South African state. This chapter is an examination of the ways in which that institutional structure came to be constructed. It begins in the 1970s, with the first proposals for some kind of chemical and biological warfare programme, and ends in the early part of the 1980s, at the first moment when the structures of a chemical and biological weapons research programme began to operate. It covers a period in which no weapons were produced, and little research was done. Instead, many committees met and discussed the proposed programme. As few records of these meetings are currently available, the information presented here is instead reconstructed from accounts offered to the Truth and Reconciliation Commission by the administrators and scientists of Project Coast.

These accounts are riddled with the efforts of those scientists and administrators to exonerate themselves of any implication of misconduct. Much of the scientist's efforts

-- those that are relevant to this chapter, at least -- were dedicated to arguing that they themselves, as individuals, were not aware that there was any possibility that the products of their work could be used within the borders of the country. Instead, as one scientist after another testified, they were told that Project Coast was intended to produce a weapons technology for use outside the country, as a defence for the South African troops in Angola against the possibility of chemical and biological warfare taking place in that conflict.¹ One scientist testified that he had acted on this belief even after the Defence Force had completely withdrawn from Angola.² The majority of these exculpatory efforts, however, were concerned with the specific scientific work conducted by each researcher, rather than with the institutional setting in which that work was done.

The testimony presented by the senior administrators of Project Coast, however, remains more problematic. Several of the directors of Project Coast's laboratories were principally researching scientists, and so the bulk of their testimonies focused on their research work rather than their administrative work. The three testimonies that did concentrate entirely on the institutional framework of Project Coast were also three of the most troublesome: one was given by the current Surgeon General, D.P. Knobel, another; that of Philip Mijburgh, the director of one of Project Coast's front-companies, Delta-G Scientific, was compelled under threat of subpoena; and the third, that of Wouter Basson, the central figure in Project Coast's organisation, was compelled by a court order.³ All

¹ A single example: Testimony of Schalk van Rensburg to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

² Testimony of Johannes Mattheus Koekemoer to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

³ See the Testimony of Lt-Gen D.P. Knobel to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 18 June 1998; the Testimony of Dr Philip Mijburgh to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 18 June 1998.

three testimonies must therefore be approached with caution, and with a certain degree of scepticism. Nonetheless, the conditions in which they were given should not be allowed to obscure the information that these testimonies do in fact contain. My task has been to evaluate this information, and to extract that which remains meaningful and convincing even after the partiality of the testimonies has been acknowledged. In doing this, the techniques of Weberian institutional theory have been most useful: by abstracting several complex and partially-contradictory histories of modern institution building into a model description of the ideal-type of institution that each of these real institutions aspired to, Weber was able to focus on the similarities between apparently dissimilar processes. That same process of abstraction, the sifting of sometimes-contradictory evidence to find the similarities and points of convergence, has animated my own argument in this chapter, and this thesis as a whole. The institutional ideal-type that structures Project Coast can be discerned through a close reading of the testimonies presented to the Truth Commission, even if the details of any given part of that institutional structure given in those testimonies are of doubtful value.

It is my contention therefore that, while this chapter's examination of the process through which the institutional order of Project Coast came to be constructed, and thus of the form that order took, has begun with a description of the evidentiary problems it faces, those problems cannot be allowed to forestall interpretative attempts such as this. I argue, later in this chapter, that it is this lack of hard evidence that has forestalled such

Warfare, 18 July 1998; and the Testimony of Dr Wouter Basson to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 31 July 1998. Also: Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and*

interpretative attempts on the parts of both the major works written on the state's chemical and biological weapons research programme, allowing them to dismiss its particular institutional order in various ways.⁴ Instead, as I argue that understanding this institutional order is essential to understanding the relationship between Project Coast and the broader state institutions in which it was located, I want to place the process of institutionalisation at the centre of this chapter, by beginning with a brief historical account of the Project's proposal, approval, and institutionalisation. I then go on to describe this institutional order in more detail, before addressing the objections that the two major works mentioned above raise. Finally, I present my particular argument about the institutional order of this chemical and biological weapons research programme.

That account must begin with the first moves towards the creation of Project Coast, which came early in the 1970. Senior officers in the South African Defence Force asked the country's Centre for Scientific and Industrial Research to put together a report exploring the feasibility of setting up a chemical and biological weapons research programme. The report argued that such a programme would be both impractical, both economically and scientifically. It recommended against the creation of a weapons research programme at the time of publication, at least. The Defence Force seems to have accepted the report's recommendations and dropped whatever plans it might have

Biological Warfare Programme (Zebra Press, Cape Town: 2002) contains an account of these various subpoenas.

⁴ Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme* (USAF Counterproliferation Centre, Maxwell Air Base, Alabama: 2001); Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme* (Zebra Press, Cape Town: 2002).

considered. It is probable that these plans were resurrected at the end of the decade, and may have formed the basis of the attempts to propose Project Coast to the Force.⁵

In 1978, the same year that PW Botha became Prime Minister, the Surgeon General of the South African Defence Force, General Nicol Nieuwoudt, was making fresh enquiries as to the possibility of setting up such a research programme. Although at least one of his enquiries was rebuffed, his plan seems to have found the support of Botha's newly-appointed Minister of Defence, a former head of the Defence Force, General Magnus Malan.⁶ By 1981, Nieuwoudt was confident enough in his plan to approach Dr Wouter Basson, a subordinate officer under Nieuwoudt's command within the Defence Force's Medical Services division, and commission him to head the proposed research programme. According to Basson, in his testimony to the Truth and Reconciliation Commission during its Special Hearing into Chemical Warfare, he was selected because he was both a doctor and an officer: he understood research practice because of his graduate specialisation, and he was trained to obey Nieuwoudt's orders.⁷ Basson, however, was testifying under duress and eager to deflect the Commission's attention away from his own role in the structuring and operation of the research programme. His role in its institutional beginnings seems larger than he would admit.

⁵ Stephen Burgess and Helen Purkitt, *The Rollback*, pp 19-21.

⁶ Burgess and Purkitt, *The Rollback*, pp 24.

⁷ Testimony of Wouter Basson to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 31 July 1998.

Between 1981 and 1982, Basson spent several months travelling between military trade fairs and scientific conventions in the US and Taiwan.⁸ When he returned the institutionalisation of Project Coast began in earnest. The programme was split into several operating branches, separating chemical and biological research, and offensive research from defensive work.⁹ Each of these branches would be given a front company of its own, to disguise the involvement of the South African Defence Force in the design of a chemical and biological weapons research programme. The first of these front companies, Delta-G Scientific, was registered in 1982. The second significant front company, Roodeplaat Research Laboratories, was registered in 1983, a year notable also for being the culmination of Botha's constitutional transformations. Several more front companies followed after the formation of these two initial companies, continuing steadily throughout the remainder of the decade, and throughout the period of Project Coast's operation. Counterbalancing this proliferation of front companies, in the early years of the research programme's operations, was the programme's practice of recruiting its administrative and scientific staff from within the Defence Force itself.¹⁰ This limited pool of initial recruits -- superseded later in the programme's operations -- bound these early front companies together. These recruits were moved from one front company to the next, according to the immediate needs of the research programme. I discuss some of the implications of this, together with more detailed descriptions of the career-paths that this practice entailed, later in this chapter. At this point, I want to emphasise instead that

⁸ Basson, 31 July 1998.

⁹ Testimony of D.P. Knobel to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 18 June 1998. Knobel was Nieuwoudt's successor as Surgeon General and head of Medical Services, and thus of Project Coast.

¹⁰ Testimony of Dr Jan Lourens to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 8 June 1998.

the majority of these recruits, like Basson himself, from one particular section of the Defence Force: its Medical Services, under the command of the Surgeon General. At that time, Nicol Nieuwoudt, one of the architects of the state's chemical and biological weapons research programme, was still Surgeon General.

The Defence Force's Medical Services division had a somewhat ambiguous relationship to the practice of war, intended as it was to provide medical support to South African troops in the field rather than to provide troops that would act in combat itself. Its primary staff complement was therefore made up of men (and some women) who had trained as medical professionals rather than as professional soldiers: doctors, nurses, and dentists. Most of these 'soldiers' would have been trained to handle weapons, but most were unlikely to have ever had to use them. Those who worked in the field would nonetheless have a very good idea of the consequences of their use.¹¹ As with the other divisions of the military, however, not all of its staff worked in the field, or would ever see combat. Instead a large number of its bureaucratic staff was entrusted with the responsibility of ordering and providing material support, in the form of surgical equipment, medication, and so forth, to the troops in the field. The staff hired to administer Project Coast's institutions, as well as those originally hired to conduct its weapons research, were therefore constrained by their own particular experience of warfare and weapons -- an abstract, rationalised, and distant experience, in general. The dependence of Project Coast on this branch of the military's institutional structure -- the

¹¹ Testimony of Sean Mark Callaghan to the South African Truth and Reconciliation's Special Hearing into the Health Sector, 17 June 1997. Callaghan was conscripted out of school and sent to Angola in 1982 to work as a medic in the field. He testified to the Commission that the result of this experience was more than ten years of struggling with a Post-Traumatic Stress Disorder.

original impetus for the programme's development having come from its commander, its chief administrator being based within its command structure, its funding largely routed through its offices, and its staff largely recruited through its departments -- may have gone some way towards explaining why Project Coast became a weapons research programme rather than a chemical and biological warfare programme, as it is often assumed to have been intended to become. It does not, however, explain the way in which Project Coast's institutional structure developed, or what it developed into.

Project Coast's institutional structure was marked by two unique components, the first of which being the proliferation of front companies, and of company directorships, outside of the military's institutional framework. The second component of Project Coast's institutional structure was the role claimed for Wouter Basson, as the mediator between the various front companies and between those companies and the military. The relationship between these two components helped to define what set Project Coast apart from any other military research programme and thus helped to define its own particular institutional identity. That relationship has been at the centre of all attempts to describe the nature of the Project's operations, and will also be at the centre of my attempt. It needs to be explored at a certain length, therefore, before being explained.

The first of the front companies, Delta-G Scientific, was created early in 1982. It was intended to provide a set of facilities within which the chemical component of the weapons research programme could be advanced. Its laboratories were to be geared solely towards chemical testing and research, while another company was to be geared

towards the biological components of the programme.¹² This intention was complicated by the fact that, between 1982 and 1985, Delta G Scientific had no physical premises. The building of its facilities, laboratories and offices, was only completed in 1985. In the three years of operation prior to that date, Delta-G operated out of a small laboratory located within the South African Defence Force's Special Forces Headquarters in Pretoria. All the early chemical research of Project Coast was thus done within a military laboratory.¹³ Nonetheless, the intention of setting up the front company was to separate that research from the military, and so Delta-G was moved as soon as possible. It was regarded, in fact, as one of Wouter Basson's first great administrative successes by his immediate superiors, and therefore set the pattern for the front companies that followed.

The most significant of these following companies was the second established, Roodeplaat Research Laboratories. Where Delta-G's laboratories were intended to be used for chemical research, those housed under Roodeplaat's banner were intended to be used for biological research. Included under this banner was a laboratory dedicated to the testing of both chemical and biological agents on animals.¹⁴ This not only resulted in Roodeplaat having a facility dedicated to breeding and maintaining these animals, but also in the first signs of a certain instability in the segregated institutional structure of Project Coast. All of Delta-G's testing was done at Roodeplaat, immediately establishing

¹² Testimony of Dr Wouter Basson to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 31 July 1998. Also see the testimony of Barry Pithey at Basson's criminal trial, as reported by Marlene Burger and Chandré Gould, *Basson Trial Report* 34, 6-10 November 2000.

¹³ Testimony of Dr Jan Lourens to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 8 June 1998. Lourens, it is worth noting here, was one of the only men to apply for amnesty before the Special Hearing. His application formed the basis for the Commission's original enquiry. I return to this in the final chapter.

a connection between two supposedly independent, unconnected research companies.¹⁵

An even earlier coincidence established this connection, one unrelated to the actual process of research at the two companies: the laboratory facilities of both Roodeplaat and Delta-G were constructed at the same time, between 1983 and 1985, and used the same individuals, recruited from within the Defence Force, to oversee their construction.

The particular ex-soldier who oversaw construction on both companies' premises was Dr Jan Lourens, an engineer affiliated first with the South African Air Force between 1982 and 1984 before being recruited by the medical wing of Special Forces. He remained in this wing for a year, before moving across to Delta-G in 1985. Despite being on Delta-G's payroll, he spent most of that year working at Roodeplaat, where he "assisted a number of scientists in manufacturing various types of equipment" while, at the same time, working as "a site engineer on the construction phase" of both facilities.¹⁶

When these two facilities were fully built, Lourens was offered "the opportunity of staying on as a site engineer, or leaving." Instead, as he told the Truth Commission during its Special Hearing, he approached Wouter Basson, in his role as Project Coast's Project Officer, and requested that he be allowed to leave with a part of the project" and set up his own front company "that looked at the chemical defence side" of the research programme. Basson acquiesced, and the company that Lourens formed in 1986, Systems Research Development, was fully funded by the South African Defence Force. Lourens

¹⁴ See the testimony offered by Surgeon General Knobel at Basson's trial, as reported by Marlene Burger and Chandré Gould, *Basson Trial Report 6*, nd. (November 1999)

¹⁵ Testimony of Dr Daan Goosen to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998.

was thus the director of a third front company, after having been in the employ of another while working on the premises of yet another front company. The blurring of the boundaries between the front companies that his career, between the end of 1984 and the beginning of 1986, illustrates was even more confused by his later career. Because, in 1987, Systems Research Development split into two and, while he remained a director of that company, Lourens left to found still another front company, named Protechnik Laboratories.¹⁷ Although neither of these two companies operated on the scale of either Delta-G or Roodeplaat, they both worked with each other, and with the other front companies that constituted Project Coast's institutional structure. The incestuous nature of these operations made it impossible for the separations between the various front companies, and between those companies and the Defence Force, to operate neatly.

Much of this confusion can be perceived in the fact that neither Lourens's directorships in several other companies, nor his employment history as a member of the Defence Force and several front companies was in any way unique. Dr Philip Mijburgh, the managing director of Delta-G from 1985 onwards, was also recruited out of the Defence Force. He held at least seven directorships in Project Coast's front companies, in addition to his role at Delta-G.¹⁸ He was also connected directly to Lourens: they were old friends from their military days, and Mijburgh had in fact been instrumental in recruiting Lourens for Project Coast. It was Mijburgh who, in 1984, had introduced Jan

¹⁶ Lourens, 8 June 1998.

¹⁷ Lourens, 8 June 1998.

¹⁸ Testimony of Dr Philip Mijburgh to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 7 July 1998. Mijburgh, unlike Lourens, had to be coerced into testifying to the Commission under threat of subpoena. Unlike Basson, however, Mijburgh was not compelled by a court order. I return to this in the final chapter.

Lourens to Wouter Basson -- the officer in direct command of Lourens during his time at Special Forces.¹⁹ Mijburgh and Basson, too, were also old friends: they had met in the late 1970s, when Mijburgh was a medical student at the University of Pretoria and Basson had returned there to complete his graduate work, after completing his national service and enrolling in the Defence Force. "Over the years," Mijburgh reluctantly told the Truth Commission, "we became friends and we shared an interest in road-running and we ran together in the mornings and we also played squash, and socialised." Indeed, almost all of the first circle of men employed in a senior position by one or another of Project Coast's front companies felt that they shared a friendship with Wouter Basson: another example being Dr Daan Goosen, the first managing director of Roodeplaat Research Laboratories. He worked with Basson on a separate research project in the early 1980s, and claimed to have been convinced of the need for chemical and biological weapons research by the military through his conversations with Basson.²⁰ And while it is possible to doubt the sincerity of each man's testimony, given as they were in a loosely juridical context, it seems impossible to doubt that Basson occupied the centre of each of their webs of justification. He was their reference point.

And not merely the reference point for the justifications of the scientists and administrators that fell beneath him in the chain of Project Coast's command. Basson was also the reference point for the decisions regarding Project Coast's operations made by his superior officers in the chain of military command. That chain of command, on which Basson was but a rung, began with the State Security Council, the body which had

¹⁹ Lourens, 8 June 1998.

²⁰ Goosen 11 June 1998.

been instituted by Botha to operate as the ultimate head of all military and police structures. The Council does not seem to have taken especial interest in the research programme, and it left Project Coast largely alone. Instead, it delegated the authority to run the research programme's operations further down the chain of military command.²¹

This authority was passed downwards from the office of the Minister of Defence on towards the office of the Chief of Military Command. This position was allocated on the basis of a revolving five-year term. The general that occupied this office when Project Coast was being planned, the general who occupied it while Project Coast was being commissioned, and the general who occupied it when Project Coast was being decommissioned were all, therefore, different individuals. General Constand Viljoen occupied this office between 1980 and 1985 and, rather than take a direct interest in the administration of Project Coast, appointed a co-ordinating committee to the task. He chaired this committee but, unlike his successor, seems to have given it little concern.²²

This committee was also too unwieldy to meet more often than once every two months. Its decision-making powers were thus absolute, but its ability to gather the information upon which those powers depended was limited. As a solution to this dilemma, the committee decided to give Wouter Basson the title of Project Coast's

²¹ See the 1986 report of the State Security Council quoted during the testimonies of Dr Schalk Van Rensburg, 10 June 1998, and Wouter Basson, 31 July 1998, to the South African Truth Commission's Special Hearing into Chemical and Biological Warfare. In his testimony, Basson denied receiving any detailed instructions from the Council. See also the Truth Commission's Special Hearing into the State Security Council, 14 October 1997.

²² Burgess and Purkitt's monograph, *The Rollback*, pp 17-21, details the creation and composition of the committee in more depth than is necessary here. Much of their information is based on interviews with the ex-Minister of Defence, Magnus Malan, and as such seems more comprehensive than that presented in the Truth Commission's Special Hearing.

“Project Officer” and appoint him to gather information on the Project’s operations. He would be expected to present this information to the committee at their regular meetings. The committee would base their decisions on the information Basson presented, and then would delegate him to process these decisions. The particular way in which the committee went about gathering and interpreting data -- one of the central tenets of modernist statecraft -- thus resulted in an unusual centralisation of power in the figure of Project Coast’s Project Officer, Wouter Basson. Indeed, it seems to indicate a further delegation of the administrative responsibility for the Project away from the committee.²³

Basson was the Committee’s point of reference for every decision it made. He was its only source of information, and the only agent it deputised. While Basson claimed to have worked closely under the command of Surgeon General Nieuwoudt, there is no evidence to support his contention that he operated under the Surgeon General’s close surveillance.²⁴ Nieuwoudt, in fact, had died nearly ten years before Basson told the Truth Commission that he had received all his orders from him. It seems, therefore, as if Basson acted without constraints or limits throughout the period in which Project Coast operated. He was at the exact centre of the Project’s institutional structure: he acted as mediator between senior officers and the scientists at work in the laboratories. His was the only route through which information and instructions passed.

²³ See the Testimony of Lt-Gen D.P. Knobel (Nieuwoudt’s successor as Surgeon General) to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 18 June 1998, for an inside account of this process. Describing Basson: “His word was accepted not only by me but also by the co-ordinating management committee.”

²⁴ Basson, 31 July 1998.

It is not surprising then that, given the autonomy Basson seemingly possessed, as Project Officer of Project Coast, his role has attracted much of the serious attention given to the chemical and biological weapons research programme. Stephen Burgess and Helen Purkitt, in their monograph, described Basson as “a highly charismatic and effective recruiter who was apt at identifying and enlisting some of the most promising and highly skilled medical researchers...” He was also a “master manager of people.”²⁵ It was his ability to inspire and manipulate his researchers and administrators that held Project Coast’s unwieldy institutional structure together. The entire institutional order of the chemical and biological weapons research programme therefore revolved around his charisma, his authority, and his ability to motivate the men and women he employed. The efficiency, and efficacy, of the research programme also depended on his ability to focus this ability towards the production of quality research and weapons development. This also meant, however, that Basson was not only unsupervised from above, but also unquestioningly obeyed from below: a combination of circumstances that allowed him, according to Burgess and Purkitt, to get away with substantial financial embezzlement. The account of Basson’s actions that emerged during his criminal trial, these authors stated, illustrated “the complex ways that CBW project managers may be able to exploit transnational financial flows and international corporate instruments to quickly move, launder, and house large sums of money for either political or personal motives.”²⁶ The way in which Project Coast was ordered, aided this exploitation by removing all checks.

Marlene Burger and Chandré Gould, in *Secrets and Lies*, make a similar argument. They,

²⁵ Burgess and Purkitt, *The Rollback*, 16.

²⁶ Burgess and Purkitt, *The Rollback*, 79

too, describe Basson as occupying the center of Project Coast's institutional web, as the order of their sub-title makes clear: "*Wouter Basson and South Africa's Chemical and Biological Warfare Programme*".²⁷ His influence shaped the limited successes enjoyed by the chemical and biological weapons research programme; it also shaped the way in which the programme degenerated into a spectacle of corruption and profiteering. This, at least, is how Burger and Gould characterize the last days of Project Coast's operations, the period in which the various front companies established at the beginning of the 1980s were rapidly and systematically privatized. I cover this period more comprehensively in the fourth chapter of this thesis; it is sufficient to say here that this characterization does not seem far from the truth. At question, however, is the role played by Basson in this spectacle. Burger and Gould imply -- argue would be too strong a characterization of their position -- that a tradition of financial corruption and mismanagement was instituted by Basson and thus, because of his central position, was disseminated through the institutional network of Project Coast. The structural order of the chemical and biological weapons research programme, whatever the original intent behind its particular formation, was thus so ideally suited to the institutionalization of corruption, and misappropriation of resources that it could have been designed to abet it.

Both these works, *The Rollback of South Africa's Chemical and Biological Warfare Programme* and *Secrets and Lies*, derive much of the information underpinning their arguments from the same source: the case made by the prosecution during Basson's criminal trial. Some words need to be said about the basis of this case, also dealt with more closely in the final chapter of this thesis: the most important of which is the fact that the charges laid by the prosecution, unlike those implicit in the Truth Commission's Special Hearing, did not refer to Basson's "human rights violations." Instead, Basson

²⁷ Burger and Gould, *Secrets and Lies*.

was charged on several counts of murder and, more relevant to this chapter, of financial embezzlement.²⁸ The prosecution chose not to argue that Basson's actions as head of Project Coast were in themselves reprehensible, as the Truth Commission's Final Report itself implied, but rather that, in the course of those actions, he had abused the institutional system of the research programme to enrich himself. The absence of any checks or balances on his autonomy had made this a relatively straightforward process.

The common bond between all three of these accounts is their description of the last years of Project Coast. Basson is described as financially corrupt, as implicated in vast mismanagement, and as having enriched himself at the state's expense; Project Coast's institutional structure, and institutional order, made this a simple process, as Basson's actions were unchecked by any senior authority. His orders were also followed faithfully, regardless of their implications. This picture seems to fit the evidence gathered by the Prosecution in Basson's criminal trial, as well as much of that given in testimony to the Truth and Reconciliation Commission.²⁹ It does not seek to explain how it was that Project Coast's particular institutional structure came to be designed; rather, it short-circuits such explanation because it describes how that structure came to be used as a tool to enable financial embezzlement. This becomes, in all three of their accounts, the sole and only purpose of the particular structure, the particular order, of Project Coast. It exists to make corruption possible; and therefore has always existed for this.

²⁸ Marlene Burger and Chandré Gould's series of *Basson Trial Reports* offers a sympathetic reporting of the Prosecution's argument, as does the same authors' *Secrets and Lies*.

²⁹ See Chapter Four of this thesis for a more detailed engagement with this period.

But there is an alternative to describing the institutional structure of Project Coast as nothing more than a smokescreen for corruption. This is to show that Project Coast's structure – while certainly eccentric given its institutional setting – can in fact be described in the more rigorous language of the Weberian ideal-types of institutions. This language undergirds this thesis's descriptions of the state's long-standing bureaucratic order. Although this language is evoked in the introduction to this thesis, it is worth beginning this attempt to describe Project Coast through those types with a more detailed portrayal of the ideal-type that animated that bureaucratic order. Central to this argument is the fact that, for Weber, modern bureaucracies are only one ideal form of state order. They are particularly modern, but exist besides others with older roots. I argue that it is from one of those other orders that Project Coast derives its own order.

According to Weber, the bureaucratic institutions of the modern state derive their claim to legitimacy from “a belief in the ‘legality’ of normative rules and the right of those elevated to authority under such rules to issue commands.”³⁰ These rules, in turn, are rendered legal through an apparent and perceptible process of rational formulation that begins with the self-consciously scientific collection of data, through censuses, statistics, surveys, questionnaires, and so forth.³¹ This information is interpreted by experts, people trained to be knowledgeable in the subject under examination, and then passed on from these experts in interpretation to those people who have been elected to

³⁰ Max Weber, “The Pure Types of Legitimate Authority,” extracted from his *Theory of Social and Economic Organization*, translated by A.R. Henderson and Talcott Parsons (Macmillan, London: 1947) and reprinted in Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (University of Chicago Press, Chicago: 1968) pp 46.

³¹ See Michel Foucault, “Governmentality,” (1978) in *Essential Works of Foucault 1954-1984, vol. 3: Power* edited by James D. Faubion. (Penguin, Harmondsworth: 2000)

political office as experts the field of public service: politicians. These politicians then combine and, through an equally transparent and rational process, draw up the laws that, in turn, legitimise the authority of the state's information collecting and processing bureaus, as well as those bureaus that then apply the actions legitimised by this process. These bureaus, classically, would include those responsible for the issuing of passports and identity documents (and thus the issuing of citizenship itself) and those responsible for the administration of public health, providing vaccinations, public hospitals, and clinics.³²

Essential to the rationality of these broadly legalistic grounds for state authority is the impersonality of this order. The individuals who occupy decision-making positions within this bureaucratic order, whether minor functionaries or senior politicians, are expected to conduct themselves without personality, or partiality: their personal opinions and beliefs do not enter into their decision-making equations, only the information presented and interpreted by experts and their own expertise should determine their decisions. Any sufficiently trained expert could fill the same position and, ideally, come to the same decision on any action. The ideal bureaucrat is therefore anonymous in the conduct of his or her job. The ideal bureaucrat is nothing other than his or her position.³³

³² Weber, "The Pure Types of Legitimate Authority." Also see Weber, *The Protestant Ethic and the Spirit of Capitalism*, translated by Talcott Parsons. (Allen and Unwin, London: 1930) for his account of the historical origins of this form of authority. Foucault, "Governmentality," provides a different history underlying a very similar description. The historical debate as to the origins of this modernist authority is secondary to my aim here, which is simply to describe an ideal-type of bureaucracy.

³³ See Michael Warner, *The Letters of the Republic: Publication and the Public Sphere in Eighteenth Century America*. (Harvard University Press, Cambridge: 1990) shows how, in the American context, this anonymity and impartiality developed: this provides yet another historical explanation for the rise of a modern state structure, separate from both Weber and Foucault's explanations.

Connecting these various layers of bureaucratic authority is a set of assumptions about the nature of knowledge. The most crucial of these assumptions, for the purpose of this section of the chapter at least, is that an individual can become an expert in a subject through rigorous academic training, and that an expert acquires a body of abstract knowledge through study, and then applies it in practice. This academic training does not fully replace learning through practical experience; but it is preferred, at least when appointing individuals to bureaucratic positions. This expertise allows them to replace their personal beliefs with a rational examination of the evidence, because it allows these bureaucrats to claim an understanding of the information presented to them by other experts. This rationale underlies the management practice of all modern institutional structures, including those that make up the modern state. The ideal-type manager has a MBA, and the ideal-type researcher a post-graduate science degree.³⁴ The practical result of this kind of knowledge, of expertise in general, is specialisation. The manager is not trained to be a researcher, and vice versa. The divisions between offices, so important to the rationality of bureaucratic order, are kept clean and distinct.

It is also important to again emphasise, as Weber consistently does, that this description is of an ideal construct rather than of the actual workings of any given institution. Each of the ideological elements that make up this ideal construct can be traced through various institutions, and through time, but the sum of their parts has almost never existed in reality. It is the pattern against which modern institutional structures have been measured. It has no space for historical contingency nor, to point to

³⁴ Max Weber, "Bureaucracy," in *From Max Weber: Essays in Sociology*, edited and translated by H.H. Gerth and C. Wright Mills. (Oxford University Press, Oxford: 1946)

the simplest level of criticism, does it have any space for human incompetence – which, as illustrated in the section above this, forms the core of the explanations presented by the Truth and Reconciliation Commission, as well as by both major works published on the subject, for the way in which the order of Project Coast was formed. And, while I would certainly not argue against the importance of incompetence in the way in which Project Coast’s programmes worked over time, I do want to argue that incompetence cannot be sufficient to explain the particular institutional structure of Project Coast. Rather, that structure is an attempt to capture a different ideal-type of order; a particular order grounded on what Weber has termed a “charismatic authority.”

Charismatic authority does not derive its legitimacy from any rational system of normative rules, practices, or precedents. Instead, it rests on a “devotion to the specific and exceptional sanctity, heroism or exemplary character of an individual person, and of the normative patterns or order revealed or ordained by him.”³⁵ The exemplary charisma of such an individual is not derived from a particular position in either a social or an institutional order, nor is it derived from some kind of special expertise. Instead, it is revealed at a specific time, and in a specific circumstance, to be present within one individual. At this time, and in these circumstances, that individual is recognised by the men and women who will come to follow him as possessing an inarguable authority. Charismatic authority cannot be learned, or earned; it can only be revealed, and obeyed.

It should be clear that charismatic authority differs fundamentally from the legal, normative, order undergirding modern bureaucracies. It does not rely on either the

collection of information, or upon the expert interpretation of that information to determine its priorities: they are revealed instead by the person possessed by charismatic authority. It is also neither impersonal nor impartial: instead it is defined by both its personality and its partiality. Its reasoning is the antithesis of legal reasoning.

Its institutional order, too, is opposed to the structures of bureaucracy. Where bureaucrats are recruited for their expertise, their knowledge and the rational proof of their competence, “the prophet has his disciples; the warlord his selected henchmen; the leader, generally, his followers.” These men and women are “not chosen on the basis of social privilege nor from the point of view of domestic or personal dependency.” Instead, the men and women who surround a charismatic leader are chosen in terms of their own charismatic qualities. From this arises the whole structure of charismatic authority: there is no such thing as “‘appointment’ or ‘dismissal,’ no career, no promotion. There is only a ‘call’ ...”³⁶ Without possessing expertise, without following career paths either to rise or to fall, the followers of a charismatic leader organise themselves by their own charisma.

Just as important as these individuals’ own charisma, however, is the fact that they organize themselves. Charismatic authority, it is important to remember, is not constructed through the efforts of the charismatic leader: rather, it is recognised by the men and women who choose to become that leader’s followers as inhering in him or her. The structure that emerges from a charismatic authority is thus constructed in a silent

³⁵ Weber, “The Pure Types of Legitimate Authority,” pp 46.

³⁶ Max Weber, “The Nature of Charismatic Authority and its Routinization,” extracted from his *Theory of Social and Economic Organization*, translated by A.R. Henderson and Talcott Parsons (Macmillan,

collaboration between a leader and his or her followers. The leader's revelation is at the centre of a web of unspoken instructions, authorization, and decisions. Both the leader and his or her followers are complicit in the creation of this web. A charismatic leader's follower follows out of a sense of his or her own duty to the leader's vision, ideals, and quest. That duty cannot be given, Weber tells us, but can only be received and recognised -- and so, in a way, that duty is constructed by both follower and leader. There is no unbending structure to a charismatic order; only mutual complicity in action.

Project Coast's institutional order depended on the legitimising authority of this ideal-type of institutional order, and of charismatic authority. Wouter Basson was the charismatic leader at its heart. Burgess and Purkitt's description of him as a "master manager of people" is thus at once accurate and far off the mark: Basson could inspire and animate people, and his followers would rush to obey any instructions he might verbalize, but he was not in any strict, Weberian sense a manager. He had no expertise, no training, and no knowledge of managerial techniques. He was a charismatic leader, not a gifted bureaucrat; and, if so, the style and structure of Project Coast's institutional order grew organically around him. It certainly, to connect this briefly with the other descriptions of that order offered in the other works on Project Coast, gave him the autonomy to commit as many acts of financial appropriation as possible, but it gave him that autonomy not as a flaw in its structure, and not because of bad management on any particular individual's behalf, but rather because of the very particular ideal-type of legitimate authority and order on which it was premised. Basson's word was absolute,

London: 1947) and reprinted in Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (University of Chicago Press, Chicago: 1968) pp 50.

even if his position in the military's command structure was uncertain, because -- circularly -- his word had to be absolute. Its absoluteness was the rock on which the authority of Project Coast was founded; the absolute and fundamental rightness of Basson's charismatic authority legitimised any actions taken in his name.

And so, the institutional order of Project Coast must be seen as being as much constructed by the efforts of Basson's disciples to fulfil his vision as it was constructed either by him, or by the military institutions within which Project Coast found itself. Jan Lourens's career within the institutional order of Project Coast serves as an illustration of this mutual complicity in construction: after spending several years in various engineering positions within the Defence Force, he was introduced into Basson's charmed circle and came under his charismatic authority. Lourens then left the Defence Force to join Delta-G, while at the same time working at Roodeplaat. When that work was completed, he approached Basson with his own proposal for a new front company, one that would fill an absence he had identified within the two principal research companies. Lourens identified that absence; Lourens drew up the plans; Lourens proposed the front company; and Lourens ran the company himself. Basson was only consulted in this process -- but that consultation was essential to the smooth progress of the process of putting Lourens in charge of his own front company within Project Coast. Without the legitimisation offered by that consultation, Lourens's companies, Systems Research Development and the later Protechnik Laboratories, would not have been any part of Project Coast. And yet, beyond that initial act of legitimisation, Basson played very little role in the actual running of either of Lourens's front companies. He was on

neither of their Boards of Directors. He did not regularly visit the companies' premises. And, according to Lourens's own testimony to the Truth Commission, Basson gave Lourens few instructions on what technologies to investigate, or what product to make.³⁷ Instead, he left those decisions to Lourens -- perhaps confident that Lourens would understand the vision of a chemical and biological weapons research programme that he shared with his followers, and also that Lourens would attempt to live up to that vision without any additional prompting, management, or supervision. This confidence can be seen as central to Weber's analysis of the mutual complicity of charismatic authority in that it provides the self-reinforcing mechanism through which Basson's authority could legitimise any action taken in his name by his followers, whether he ordered it or not.

But Wouter Basson, for all the particularity of his charismatic authority, was part of a larger military structure. The military's institutional order was a cousin of a pure bureaucratic order, also legitimised by a strict set of rationalised rules of tradition, of expertise, and of technical knowledge that structure its chain of command. Unlike a bureaucracy, however, the power that animated the military chain of command is strongly centred in its executive core, the General Staff. (When South African scholars spoke of the militarisation of the country, this concentration of power in a strong executive was always invoked as illustration.³⁸) Both military and bureaucratic orders required a strong chain of command: each command given by a manager was not only legitimised by his or her expertise, seniority, and position, but also by the records that were created to

³⁷ Lourens, 8 June 1998.

³⁸ See Cock and Nathan, *War and Society*.

explicitly position that command within the bureaucratic structure.³⁹ The same goes for the military: each command was legitimised not only by the commanding officer's superior understanding of the situation, but also by his or her ability to position that order within a broader tactical strategy. In both these situations specific orders were given for each specific situation, and the purpose of the traits of bureaucratic order -- expertise, records, technical knowledge -- was to enable any given manager, or officer, to make legitimate decisions. The purpose of charismatic authority is to do the same thing: to enable Basson's disciples, his followers, to make legitimate decisions at any given time. Differences lie in the absence of records, in the absence of expertise, in the absence of consultation: Basson's charisma legitimised actions taken in his name. He was not called on to administer each decision-making process; nor was he called upon to make those decisions work; his implicit approval was sufficient to allow their making. Basson, in other words, might have been a soldier; but his being a soldier was irrelevant to the way in which his charisma operated. Basson's followers may have been largely soldiers, liberated from the Defence Force; but their military training and rank was irrelevant to the way in which each was invested with his legitimate charismatic authority.

An inevitable conclusion then is that the location of Project Coast within the institutional order of the South African Defence Force was equally irrelevant to its internal operations. We cannot explain the actions taken by the managers of each of Project Coast's front companies by their position within the military's hierarchy; nor can we explain the development of the research programme at Project Coast's core by reference to the military's strategic aims. But no more can we explain these actions, and

³⁹ Weber, "Bureaucracy."

this development, by recourse to a bureaucratic ideal: the rationales for these were not set at the beginning of Project Coast's operation, nor were they based on rationalised, and recorded, principles. Instead, the late Apartheid state's chemical and biological weapon research programme, as well as the institutional structure in which it was located, developed over time, in response to internal pressure of Wouter Basson's charismatic authority. The way in which the research programme developed is only explicable in terms of the development of the institutional structure of Project Coast.

The next chapters of this thesis, then, must describe this development as it unfolded over the decade-long period in which Project Coast operated. The second chapter, immediately following this, focuses its narrative on the development of one front company, Delta-G Scientific, and on the principal research project carried out under its aegis, a project that resulted in the production of a new form of tear gas. The chapter following that, the third chapter of this thesis, uses the same structure to examine a different front company, Roodeplaat Research Laboratories, and a different research project, this one aimed at the production of a new form of contraceptive. These two institutions were the earliest and largest of Project Coast's front companies, and the two research projects described in detail were the largest such project carried out at these institutions. The development of the institutional order of the chemical and biological weapons research programme, Project Coast, and the development of the ambitions underlying that research programme are intertwined, and will be studied in this way.

Chapter Two

Chemical Weapons Research and “Crowd Control”

Once the South African Truth and Reconciliation Commission had completed its Special Hearing into Chemical and Biological Warfare, it placed its conclusions into its *Final Report*. In this work it became clear that the Commission had great difficulty in accepting the triumphalist narrative presented by Dr Wouter Basson, and others. Project Coast, the Commission concluded, had been an overwhelming failure. The only exception to this rule, the *Report* admitted, was the production of a new, stronger and more efficient, form of tear gas at Delta-G, the first of Project Coast’s front companies to be established. The new tear gas was named “CR” and had successfully been designed as a replacement for the gas then in use, “CS.”¹

This chapter therefore is first an attempt to describe the one successful research project carried out under the aegis of the state’s chemical and biological weapons research programme. That project, aimed at producing a new form of tear gas, was noteworthy not only for its unusual success, but also for the unusual history of its development. The research that allowed Project Coast’s front company, Delta-G, to produce a new form of tear gas did not originate within any of the structures of the late

Apartheid state's chemical and biological weapons research programme. The initial research was instead conducted under the command of Lothar Neethling, the head of the South African Police's forensic laboratories. The second aspect of this chapter must therefore be an attempt to describe the special relationship that existed between Lothar Neethling, as a representative of the Police, and Delta-G, a front company for the South African Defence Force. The final aspect of this chapter's examination of the chemical weapons research project that ended in the production of a new form of tear gas is thus an attempt to determine whether the particular institutional history of the project's development had any impact on the product, or on the way in which it was to be used.

The tripartite ambition structuring this chapter requires a similarly broad use of the theoretical perspectives already proposed in both the Introduction and the previous chapter. The militarisation of the state's institutions may help to explain how it was that Lothar Neethling, as the head of the Police's forensic laboratories, came to begin his own chemical weapons research programme. The tensions between this militarisation, the bureaucratic order of scientific research, and the charismatic authority undergirding the larger structure of Project Coast, surely help to describe the conflicting ambitions that helped to determine the nature of the research project. But, despite these theoretical influences, any account of the development of this research project, and of its underlying implications, must begin with a history of Delta-G Scientific, the institution within which the late Apartheid state's chemical and biological weapons research programme succeeded in producing a new form of tear gas. This account can be no exception:

¹ South African Truth and Reconciliation Commission, "Special Investigation into Project Coast: South Africa's Chemical and Biological Warfare Programme," *Final Report*, Volume 2, Chapter 6, Sub-Section

Delta-G Scientific was founded early in 1982, the first of Project Coast's many front companies. It was designed to provide a set of laboratory facilities within which the chemical side of the state's chemical and biological weapons research programme could be developed. Only chemical weapons research was intended to take place at Delta-G; all other sides of the research programme were to be developed in other institutions.² This foundational attempt helped to determine the institutional structure of Delta-G, but no more than the financial, administrative, and material constraints that surrounded the front company during its first years of operation. The most notable of these constraints, and perhaps the most important, was the lack of a separate research facility: for the first three years of its operation, between early 1982 and early 1985, Delta-G Scientific, a nominally-independent front company, operated out of a small laboratory located in the Headquarters of the South African Defence Force's Special Forces division.³ For the first years of its operation, Delta-G Scientific was limited in the scale of research it could embark upon within the cramped, borrowed, laboratory facility available. It was also constrained in another way by its location within Special Forces Headquarters: for the first years of its operation, Delta-G Scientific could only employ members of the Defence Force's various operational branches as its researchers, administrators, and managers.

(c).

² Testimony of Dr Wouter Basson to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 31 July 1998. Also see the testimony of Barry Pithey at Basson's criminal trial, as reported by Marlene Burger and Chandré Gould, *Basson Trial Report 34*, 6-10 November 2000.

³ Testimony of Dr Jan Lourens to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 8 June 1998.

The most pressing of the reasons underlying this constraint is also the most obvious: the illusion of Delta-G's independence, and of the distance between the military and its research programme, could not be maintained as long as the company operated out of a laboratory located within a military building. It could not convince commercial researchers to work for it as long as it was so clearly dependent on the military's support, not without completely blowing its own cover story. Instead, the institution recruited loyal scientists from within the military and produced, for the same reasons, as few commercial products as possible.⁴ This is not to say that no research was conducted in this period: indeed, the research into a new form of tear gas -- the focal point of this chapter -- was begun in this period. But until the construction of Delta-G's new laboratory facility was completed, the research work conducted by the front company's staff was constrained by the circumstances in which it was forced to operate.

These constraints may explain why, in 1985, when Delta-G moved to its new location and began to recruit commercial and academic scientists to its staff, the first wave of its new employees found "a horror show in incompetence" on display.⁵ Not all of the scientists entering the company -- such as, for example, Dr Hennie Jordaan, the man who gave the quote above -- were informed of its role within the Defence Force. Despite their ignorance of this particular matter, this infusion of professionalised science that these commercial scientists brought with them seems to have revitalised the

⁴ See the testimony of Gerald Caldwell at Basson's criminal trial, as reported by Burger and Gould, *Basson Trial Report 34*, 6-10 November 2000, for background to this period.

⁵ Dr Hennie Jordaan quoted in Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme* (Zebra Press, Cape Town: 2002) pp 22. See also Jordaan's testimony at Basson's criminal trial, as reported by Burger and Gould, *Basson Trial Report 25*, 11-17 August 2000.

company. By the middle of the next year, 1986, Delta-G was flourishing. Its first major research project, the research into a new form of tear gas, was bearing fruit and it was about to embark on a highly ambitious research project that would build on this early success.⁶

In the same period Delta-G had also undergone an administrative transformation. The founding Managing Director, Dr Willie Basson (not a relation of Wouter Basson, but merely a colleague in the Medical Services of the South African Defence Force), was replaced by Dr Philip Mijburgh. Mijburgh, like Willie Basson, had previously been a medical doctor working within the Defence Force's Medical Services under the operative command of Wouter Basson. Mijburgh was also a good friend of Wouter Basson's from their shared period at the University of Pretoria, during the late 1970s.⁷ His appointment was justified by vague allegations of mismanagement on Willie Basson's part, but none of the testimonies to either the Truth Commission or to the bench in Wouter Basson's criminal trial have addressed exactly what that mismanagement involved. It seems instead as if Mijburgh was appointed to provide a new face for the front company. If so, his appointment served its purpose: Delta-G remained undetected as a front company.

And so, in 1986, Delta-G's confidence was at a height. It was proving successful both as research institution and as way of distancing the Defence Force from the weapons research that it had initiated. It should have been on the verge of realising the ambitions

⁶ Testimony of Dr Johannes Matteus Koekemoer to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

⁷ Testimony of Dr Philip Mijburgh to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 18 July 1998.

of the Defence Force. Instead, the next few years of its operations were marked by a steady degradation in the quality of the research produced in its facilities. The scientists employed in 1985 gradually left the company. No new products were developed. In 1991, Delta-G was privatised by the late Apartheid state, at a large loss. 1986 was therefore in fact the height of Delta-G's operations -- a height which it never regained. Its subsequent collapse is studied in the fourth chapter of this thesis. This chapter is concerned with the research work conducted during its brief productive period.

The focus of my examination of Delta-G's research work is the research conducted within its laboratories into developing a new form of tear gas. Any study of this particular research project must be grounded in an examination of the remainder of the front company's research work. As Delta-G was designed to provide a space for Project Coast's chemical weapons research, it goes without saying that the framing context for all the research conducted was that form of chemical research. Within that framing context, the kinds of chemical research conducted can be split into two parts: offensive research, aimed at developing weapons, and defensive research, aimed at developing protection against these weapons. It was the repeated contention of all the scientists and administrators at the Truth Commission's Hearing that Delta-G's principal purpose was to provide defensive research.⁸ Of all these scientists and administrators, however, only one could testify to direct involvement in such work -- and the bulk of his

⁸ Some examples: Koekemoer, 9 June 1998. Mijburgh, 18 July 1998. Basson, 31 July 1998.

work was done outside the institutional structure of Delta-G.⁹ It is therefore more likely that the bulk of the work done at Delta-G was directed at producing chemical weapons.

Nonetheless, a certain amount of defensive chemical research was conducted at Delta-G during its period of operations. It is difficult, as Wouter Basson and his lawyers repeatedly argued during his criminal trial, to tell the difference between research intended to produce weapons for use in warfare, and research intended to produce weapons for use in testing newly-developed protective measures.¹⁰ Some of the chemicals produced within Delta-G may have been used to test the protective suits developed by Dr Jan Lourens's two researching front companies, Systems Research Development and Protechnik Laboratories. In neither of his testimonies to the Truth Commission and to the bench in Basson's criminal trial did Lourens mention witnessing such a test.¹¹ This does not rule out the possibility that it occurred. Delta-G also possessed analytical capabilities, and there is some evidence that they were used in attempts to identify possible chemical substances that might have been used against troops in Angola in the early part of the 1980s.¹² Despite the protestations of the company's managing director, Dr Philip Mijburgh, it does not appear as though this aspect of Delta-G's operations was ever the largest part of the research work conducted.

⁹ Lourens, 8 June 1998. Lourens's companies, Systems Research Development and Protechnik Laboratories, both manufactured protective suits for the Defence Force.

¹⁰ An example is reported in Burger and Gould, *Basson Trial Report 20(a)*, 12-24 May 2000.

¹¹ Lourens, 8 June 1998. Also the reported testimony of Jan Lourens in Burger and Gould, *Basson Trial Report 20(a)*, 12-24 May 2000.

¹² Koekemoer, 9 June 1998.

Instead, that dubious honour was reserved for a particular branch of offensive chemical weapons research conducted by the company's scientists, that which involved the production of a variety of chemical gases aimed at controlling insurgent crowds. This research itself had two major components, of which the first was the production of a new form of tear gas. The second was the production of a range of gases intended to alter the mood of an insurgent crowd, to pacify the individuals within that crowd without the use of armed force by temporarily altering their brain chemistries.¹³ The chemicals that Delta-G's scientists proposed to use included methaqualone, the active ingredient in the street-drug Mandrax, as well as MDMA, the active ingredient in the street-drug Ecstasy, and THC, the active chemical in marijuana. Between 1987 and 1991, experiments were conducted on placing each of these drugs into tear gas grenades. Animal tests were also conducted, in an attempt to determine the effects of these drugs in this form. The experiments, and the tests, bore no immediate fruit. And, instead of continuing with the research, the administrators and scientists working on this particular research project seemed to part ways: the administrators pushing for newer, and more expensive, approaches to the task while, at the same time, the scientists lost all interest in continuing.¹⁴ This approach was a failure, but the earlier attempts by the same group of scientists to produce a new form of tear gas were successful. These two projects accounted for the bulk of the chemical weapons research conducted at Delta-G's labs.

¹³ Testimony of Lt-Gen (Dr) Lothar Neethling to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

¹⁴ Koekemoer, 9 June 1998, provides a detailed overview of this process from his perspective as a scientist who believed in the project's utility and possibilities. See also Mijburgh, 18 July 1998, for the administration's perspective. Although their stories diverge predictably on the issues of responsibility, the narrative offered above draws on the convergences between their stories.

And, although the research into various forms of crowd controlling gases was never the only work conducted at Delta-G, it was the most successful chemical weapons research project conducted within the company. While the attempt to create a crowd controlling gas out of street drugs did not produce a final agent, the attempt to create a new form of tear gas did in fact bear fruit.¹⁵ The later attempt to turn street drugs into chemical weapons was founded on this success, even to the extent of using the same researching scientists.¹⁶ The success of this particular research project is problematic, however, because it was also the only research project not to have been initiated within the confines of Delta-G, Project Coast, or the South African Defence Force. Instead, as I stated at the beginning of this chapter, the initial research work for this project was done under the aegis of the South African Police's forensic laboratories. The problem that this fact poses is theoretically simple: the purpose of a police force, in any given state, is separate and distinct from the purposes of a military force. The one is concerned with the policing of the law of a state within its territory, and takes as its object that state's subjects; the other is concerned with the imposition of one state's power onto another state's territory, and takes as its object that other state's own military forces. In practice, however, this distinction is always harder to make; and in South Africa, in the 1980s, and at the height of the militarisation of the state's institutional order, that distinction is still harder to make.¹⁷ Despite this practical *caveat*, the origins of this form of chemical weapons research within the institutions of the South African Police is still a problem for

¹⁵ Truth and Reconciliation Commission, *Final Report*, Volume 2, Chapter 6 (c).

¹⁶ Koekemoer, 9 June 1998.

¹⁷ Jacklyn Cock and Laurie Nathan, *War and Society: The Militarisation of South Africa* (David Phillip, Cape Town: 1989) remains the best overview of this argument. Nathan's article, "Troops in the Townships" in that volume, details some of the ways in which the separation between the tasks of policing and of waging war was eroded in the mid-1980s.

the argument of this thesis about the nature of the state's weapons research programme. For this reason, as well as for the purpose of describing the development of Delta-G's own tear gas research project, the origins of this research must be detailed.

The South African Police's limited chemical weapons research programme was begun at the initiative of one man, Lothar Neethling, the head of the Police's principal forensic laboratories in Pretoria. Although Neethling rose to the rank of General in the Police soon after beginning this project, he never saw himself as a career officer, or a natural policeman -- during the Truth Commission's Special Inquiry he emphasised his training as an agricultural scientist, and called himself a "pseudo Policeman." Nonetheless, he rose rapidly through the ranks of the Police, at least in part due to his enthusiasm for his work: it "suited my temperament very well" as he told the Commission.¹⁸ Significantly, Neethling seems to have been allowed to conduct his work without much interference. Indeed, the structure of the Police's forensic laboratories seems to have been largely separate from the ordinary command structures. This gave Neethling the autonomy to turn his laboratory structures away from the simple provision of forensic analysis to the production of a new form of tear gas, intended to provide the Police with a tool to use against insurgent groups. It is worth noting here that, at the beginning of his research at least, Neethling claimed to have worked without any support from the institutional structures of the South African Police, or from his commanding officers. His own ignorance of the work of policing, as he described it, seems to have separated him from the institutional order within which he was working. The similarity

¹⁸ Testimony of Lt-Gen Lothar Neethling to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998.

between the order of his own research programme, and the charismatic order of Project Coast under Wouter Basson, is notable, if not particularly revealing. It is possible to describe Neethling as a charismatic leader in his own right -- which may explain the process by which his work came to be integrated into the ambitions of Project Coast.

Neethling began his research "without," as he later told the Truth Commission, "any awareness on my side that there would be any possible interest from the Defence Force." Some of this ignorance may be explained by the fact that Neethling began to conduct his research into tear gas in 1977, three full years before the South African Defence Force initiated Project Coast. And it was not until three years after that, towards the end of 1983, that Neethling received any indication of the Defence Force's interest, when he was summoned to a meeting between himself, the Commissioner of the South African Police, the Minister of Law and Order, and the Surgeon General. In his account of that meeting, Neethling claimed to have been asked to "assist... in providing Dr Basson, who had a firm with the name of Delta-G, with substances... for the combating of unrest, and [for] crowd control..."¹⁹ Neethling went on to tell the Truth Commission that, as this stated aim dovetailed with his own conviction, forged in the aftermath of the 1976 Soweto Uprising, that the Police needed to use less lethal weapons if it wanted to control similar insurgencies, he fully acquiesced to this request. This meeting, held in 1983, is the only evidence Neethling, or anyone else, presented to the Truth Commission for the existence of an official connection between the military and the Police. This suggests that, for much of its existence, the work Neethling initiated was not driven by an interdisciplinary drive, but rather by Neethling's technical interest in the use of tear gas

within the context of policing. His ignorance of the daily work of policing may also help explain why it was that “riot control” occupied so much of his attention. Even if this is an over-interpretation, one thing is clear: the research that Neethling began was intended for use by the South African Police up until 1983, when it was handed over to Wouter Basson, Delta-G, and the South African Defence Force.

This process began in the aftermath of the 1983 meeting, when Neethling allowed the Surgeon General to set up a meeting between him and Wouter Basson, in which he would pass over the results of his own research to Basson. The meetings following this are not recorded in any of the available sources, but at least one aspect of them is clear from the later records: the pretence that Basson was simply a representative of the firm, Delta-G, did not last long. Within the next years, Neethling became a constant presence within the corridors of that company, as well as appearing in several other of the front companies.²⁰ He also assisted in conducting tests of the chemical agents produced at Delta-G throughout the remainder of the decade. But, despite this later relationship with Basson and Project Coast, at the time of the meeting Neethling was in no way a part of the Defence Force’s research order. The constraints that shaped the way in which he had conducted his research up until 1983, and the aims that had suggested the approaches he had followed up to this point, were not those of the state’s chemical and biological weapons research programme, and neither were they those of the Defence Force itself. The foundation upon which Project Coast’s research into producing a new form of tear

¹⁹ Neethling, 11 June 1998.

²⁰ See Koekemoer, 9 June 1998, for Delta-G, and the testimony of Dr Schalk Van Rensburg to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 9 June 1998, for an account of Neethling’s presence at Roodeplaat.

gas rested, then, was formed by the requirements of the Police, and particularly by the requirements of the Police's "riot control" unit. The most important aspect of this foundation, for the purposes of this chapter, is also the most basic: the South Africa Police, and its "riot control" unit, worked within the borders of the South African state. The subjects upon which its authority was exercised were the subjects of the South African state. Due to its institutional location within the Defence Force, Project Coast's scientists were expected to create products that would be used outside of the border of South Africa, and on the armed forces of other states, other countries. The way in which the scientists employed at Delta-G addressed this core contradiction helped to determine the nature of the only success the Project enjoyed. To understand that nature, then, the history of the research programme needs to begin with Neethling's own research; and thus with the problem that animated his initial work, the efficacy of tear gas as a crowd control agent.

In the late 1970s, when Neethling began his research, the South African Police were using grenade-like canisters to release tear gas. These canisters were either lobbed into the crowd by hand or fired into the air, from which they would then fall into the crowd. They worked by igniting a portion of the CS compound which then burned into a thick gas. The canisters would, ideally, be within the bounds of the crowd as the gas was released – thus saturating the crowd with the gas, rather than the police attempting to flush the crowd out.²¹ This mechanism had been in common use internationally for some decades and, according to Neethling's testimony, had recently been superseded by a new

²¹ Eric Croddy, with Clarisa Perez-Amendariz and John Hart, *Chemical and Biological Warfare: A Comprehensive Survey for the Concerned Citizen* (Copernicus Books, New York: 2002) esp. pp 116-123.

distributive mechanism. This new mechanism was not based on the explosive force of grenade-like canisters, but rather on the steady pressure exerted by an aerosol spray. As far as Neethling was concerned, these tear gas aerosols were the wave of the future and would, if he could just develop them, immediately address the most pressing of the problems he had identified: namely, that the tear gas used by the South African Police was inefficient, both in its formulation and in its actual use. He told that Truth Commission that "...if you put it [tear gas] into a smoke formulation you destroy the active ingredients, and that's a big problem... 85% is being burned. It's as good as taking a roll of money and burning it."²² An aerosol, unlike a tear gas canister, did not burn a portion of the chemical compound at its core. For Neethling, these aerosols were the first step towards improving the efficiency of the Police's use of tear gas against an insurgent crowd. Some explanation illustrates why.

If the technology underlying the tear gas canisters in use could be likened to that underlying grenades, then that underlying aerosol dispensers could be likened to that of household sprays: cooking sprays, deodorants, and insect repellent. Like those sprays, the tear gas aerosols worked by suspending CS powder into a liquid solution, and then pressurising that solution. When the pressure was released – in a household spray by depressing a button or, as in this case, releasing a seal – the liquid would be rapidly expelled from the aerosol. The stream of liquid would almost immediately evaporate into its gaseous form, which would then saturate the crowd at which the aerosol had been aimed. The rate of release, as well as the efficiency of that release, was substantially faster than that produced by a tear gas canister. Aerosols, too, since they did not rely on

²² Neethling, 11 June 1998.

the partial consumption of the active material, were cheaper. The final advantage of aerosol dispensers over the grenade-like canisters of tear gas was simple in theory, if rather less so in practice: aerosols, unlike canisters, could be aimed, controlled, and shut down if they threatened their wielders. Tear gas aerosols were therefore not only more efficient in that they consumed less of their chemical compounds in the distribution of the tear gas, but also in that they were less of a danger to the officers that wielded them.²³

Neethling therefore began his attempt to modernise the South African Police's use of tear gas by developing an imitation of the aerosol system he had seen other countries use in "riot control". The introduction of these aerosols would, he argued, increase the efficiency of an officer's response to an insurgent crowd by both increasing the volume of gas in circulation and by allowing that officer to direct the flow of the gas away from his or her compatriots. The success of this initial project was rapid and significant: by 1982 tear gas aerosols were standard equipment for Police use during attempts to control insurgent crowds. But the success of this project should not be allowed to obscure the other project Neethling had embarked upon when he began his research work in 1977, the project in which he aimed to develop a new form of tear gas. For all its efficacy, the development of tear gas aerosols was never intended as anything other than a stop gap measure. The true improvement in the efficiency of the Police's operational use of tear gas would come through the development of a new gas that would be both a more efficient chemical formulation, and also a more effective weapon.²⁴ The rationale that

²³ Croddy *et al*, *Chemical and Biological Warfare*. See also: Robert Harris and Jeremy Paxman, *A Higher Form of Killing: The Secret Story of Gas and Germ Warfare* (Chatto & Windus, London: 1982) Neethling, 11 June 1998, details how he explained these technical differences.

²⁴ Neethling, 11 June 1998.

lay beneath this second branch of Neethling's own chemical weapons research programme was the same as the rationale that lay beneath his production of aerosol sprays: to modernise the Police's "riot control" units by developing products that would work more efficiently, more effectively, and with a greater degree of precision.

There is no evidence that, when the research conducted by Neethling in the Police's forensic laboratories was handed over to the military researchers at Delta-G, at the end on 1983, the rationale constraining Neethling's research was replaced by any rationale more suited to the possible military use of tear gas. There is little information about the period between 1983 and 1985, during which Delta-G's scientists were located within the Special Force's Headquarters in Pretoria, except that these scientists succeeding in extending Neethling's research into the production the first test quantities of a new tear gas.²⁵ For the period after the front company had moved into its new premises, and had begun to hire researchers from outside of the military, however, more sources of information are available. The most revealing of these sources is the testimony given during the Truth Commission's Special Hearing by Dr Johannes Koekemoer, the scientist who headed Delta-G's research into the refining, and then production, of this new form of tear gas. Like Neethling, he also claimed to have never had any doubts as to what his research was intended to produce: "a riot control agent." The only difference in his testimony was environmental: that riot control agent was not necessarily designed for use within South Africa. He told the Truth Commission that he had joined Delta-G in the belief that his research was going to benefit South African

²⁵ Lourens, 8 June 1998. Also the testimony of Gerald Caldwell during Basson's criminal trial, as reported in Burger and Gould, *Basson Trial Report* 34, 6 - 10 November 2001.

soldiers stationed in Angola. Therefore, he argued, all of his work was intended for use outside South Africa's borders, even including the research into a new form of tear gas.²⁶

The actual process of Koekemoer's research, at least as he described it, did not require him to give much regular thought to the purpose underlying his work. The conceptual framing had been already completed when he entered Delta-G, initiated by Neethling and then cemented by the military researchers under Dr Willie Basson's directorship. Instead, Koekemoer's principal task was to refine the experimental batches of the new tear gas already produced. This, in itself, would not necessarily prevent a scientist from closely considering the targets against which the new form of tear gas would be used, if only so as to determine what exactly a refined version of the gas would be required to achieve. Koekemoer, however, claims to have given little thought to this aspect of his work. He chose to focus his attention, instead, on simply improving the efficiency of the chemical reaction: making the tear gas work faster, and more violently. The closest his research seems to have come to considering the physical impact of this new form of tear gas on its targets was a series of experiments conducted on baboons.²⁷

Dr Jan Lourens witnessed one of these experiments, and described it to the Truth Commission. He began by warning the Commission that "it wasn't a fantastically scientific experiment in the sense of particular measurements or blood samples being taken." An open wire cage was used to house a single baboon. Lourens told the Commission that he did not know whether it was male or female, adult or juvenile. Once

²⁶ Koekemoer, 9 June 1998.

the baboon had been locked in and the observing party withdrawn to a judicious distance, a grenade-like tear gas canister was “chucked into the cage.” Once in the cage, the canister “released the tear gas” and the observing scientists watched its effects on the baboon. As far as Lourens was concerned, “that really was the extent of the experiment.”²⁸ The scientists present watched as a heavy grey fog of tear gas poured out of the grenade-like canister. The gas would in fact have consisted of a fine grey powder that would have settled on the baboon’s exposed skin, in its open eyes, and in its open mouth. The tear gas compound would then proceed, in Koekemoer’s phrase, to “burn the blue devil out” of anything it had touched. If the baboon had tried to wash itself in an attempt to cool the burning, one of the new innovations that Neethling, the military scientists, and Koekemoer had included in this particular form of tear gas would kick in. The new form of tear gas developed by Delta-G would not be diluted in the presence of water, but rather reactivated once more. Washing would only enhance and prolong its effects.²⁹ At no point did either Lourens, or Koekemoer, attempt to associate the effects of the new tear gas on the experimental baboon with the effect it would have in the field.

Instead when Koekemoer, during his testimony to the Truth Commission, turned his attention to the effects of this new tear gas, he once again spoke only of these effects in impersonal terms: while being “about 10 times as active as CS”, the new tear gas was also “about one third as toxic” -- its “toxicity level on inhalation” being “about seven

²⁷ Koekemoer, 9 June 1998. See also Koekemoer’s testimony during Basson’s criminal trial, as reported in Burger and Gould, *Basson Trial Report 04*, 29 October - 1 November 1999.

²⁸ Lourens, 8 June 1998.

²⁹ Koekemoer, 9 June 1998.

point five grams per kilogram.”³⁰ This meant nothing more than that the newer tear gas was less poisonous than the older tear gas, which was only an indication that the long-term effects of exposure to this form of tear gas would be less serious than those brought upon by exposure to the older CS tear gas, which include blindness and asthma.³¹ Koekemoer had no more to say about the effects of the new tear gas upon human subjects. Instead, he indicated to the Truth Commission that he had in fact had some doubts about the advisability of the gas’s use. “It has a very persistent effect on the environment,” he told the Truth Commission, “that’s why I can’t see that it can be used as a riot control agent, because if you’ve contaminated an area for the next five years anything -- if you come into contact with soil it will still have an irritant effect on you.” This he believed was why he would not have recommended its use in action.³²

Koekemoer’s reservations seem to have been heard, if not necessarily accepted. When Lothar Neethling testified to the Truth Commission, two days after Koekemoer, the Commission’s representative asked him to respond to this part of Koekemoer’s story. Neethling’s response was simple: “Mr Koekemoer doesn’t know much about this.” His assessment, Neethling went on to say, was unfounded and untested. As far as he was concerned, he told the Commission, “I had no concern whatsoever that there could possibly be traces of CR in the environment after I had thrown a CR or tear gas grenade. It would not hurt anybody, it wouldn’t make a frog sing...” He knew this, he continued, because he had been part of a team that had, in fact, tested the environmental impacts of

³⁰ Koekemoer, 9 June 1998.

³¹ Harris and Paxman, *A Higher Form of Killing*. Croddy et al, *Chemical and Biological Warfare*.

³² Koekemoer, 9 June 1998.

the new form of tear gas that Delta-G had produced: "we saturated areas with CR in Malierskop where a week later we operated, and nobody even complained of an itch..."³³

This was not the only operational experiment conducted on the new form of tear gas developed at Delta-G. Neither was it the only such experiment conducted without the participation of Koekemoer, and his research team. And nor was it the only such experiment conducted with the integral participation of Lothar Neethling -- who was, after all, a senior general in the South African Police and played no official role within any of Project Coast's institutions. Neethling's testimony to the Truth Commission revealed his participation in a second operational experiment, designed to test the effectiveness of the new tear gas, CR, in action. The immediate cause for Neethling's disclosure of this experiment was a desire to discredit Koekemoer's claim to scientific authority: he could not understand the effects of the gas he had refined, Neethling claimed, because he had "not yet walked through the smoke of a [tear gas] grenade" whereas Neethling himself had done just that. He told the Truth Commission that he had walked through a sealed chamber filled with the tear gas and found that "there were no ill-effects afterwards." It was for this reason, he said, that he believed that CR was perfectly safe for use against human targets. He had survived it unscathed; so too could other exposed individuals.³⁴

Beyond providing further illustration of the extent to which a close working relationship existed between Neethling, as a senior general in the South African Police,

³³ Neethling, 11 June 1998.

³⁴ Neethling, 11 June 1998.

and the administrators of Delta-G, as a covert part of the South African Defence Force, this particular experiment also points towards the problem of separating the use of tear gas in policing from the use of tear gas in warfare. Neither the stated ambitions of Neethling -- to produce a more efficient tear gas for the use of the Police -- nor the stated ambitions of Koekemoer -- to refine "a riot control agent" for use in Angola -- included any interest in the effect of the new tear gas on isolated individuals. Nonetheless, the fact that such an experiment was conducted illustrates something of the bifurcated vision of the targets of the tear gas produced by Delta-G: on the one hand, it was intended to be used against large groups of people; on the other hand, the majority of experiments recalled for, and recounted at, the Truth Commission's Special Hearing were designed to test the effect of the chemical agent on isolated individuals. To be sure, tear gas is intended to forcibly separate individuals from each other within a crowd, thus allowing the Police, or the Defence Force, to arrest or otherwise forcibly control those individuals. Nonetheless, none of the tests described at the Truth Commission's hearing tested this particular means: except for one test, all of these experiments tested the chemical compound's effectiveness against lone individuals. The one exception to this rule was the tests conducted at Malierskop during a large-scale troop manoeuvre. But even then, the test's purpose was not so much to determine the efficacy of the gas in splitting a crowd, but rather to determine what its long standing effects on the environment would be. These tests, at least as recounted to the Truth and Reconciliation Commission, seem to reveal a deep-seated uncertainty as to CR's use.

A brief examination of the environmental tests conducted at Malierskop, as described by Lothar Neethling, may help resolve this problem. While the importance of these tests for both Koekemoer and for Neethling's testimonies to the Truth Commission seemed to lie in their different claims to expertise, the existence of these tests also reveals a particular assumption underlying both of their work on tear gas. First, a note of clarification: tear gas is not sprayed onto the soil, but rather into the air around a group of people standing on the soil. The group of people is the primary target of a normal tear gas manoeuvre, the air around them is the medium in which the gas is released, and soil beneath them is irrelevant. CR tear gas, like any other chemical weapon, saturates the soil when it filters down from the air in the same way as it saturates the exposed surfaces of individual bodies in a crowd -- it does not, however, react with the soil under normal circumstances. It is therefore possible that a film of reactive chemical could persist in the soil after the tear gas has ceased to react on the skins of the individuals in a crowd; that chemical film could react on the skins of any person who then happened to come into contact with that soil.³⁵ The purpose of the Malierskop tests, as described in Neethling's testimony to the Truth Commission, was to determine for how long the chemical residue remained active in inert soil, and for how long an area would have to be quarantined before it was safe.³⁶ Implicit in such an experiment is the assumption that the land above which tear gas is used will be lived on soon after the gas has been used; and, also, that the South African state, as the users of the chemical agent, was responsible for the safety of that land's occupants. These are perfectly ordinary assumptions for the Police to make, in that the land over which they would release tear gas would be the territory of the South

³⁵ See Koekemoer, 9 June 1998, as well as Croddy, *et al*, *Chemical and Biological Warfare*.

³⁶ Neethling, 11 June 1998.

African state, and in that the targets of their original tear gas attack would be subjects of that state, as would be the affected occupants of that land. But the Defence Force would not, ideally, have to make the same set of assumptions: rather, the land over which their forces would use tear gas would not be sovereign territory of the South African state; nor would the affected occupants of that land be South African citizens. This is doubly so in regards to the conflict in Angola, where no territorial gains were either implemented or expected. The problem of Project Coast's uncertain intentions thus become not merely a problem of how the new gas was to be used; but also of who was to use it -- the Police or the Defence Force -- and, most importantly, where was it to be used. Was the new form of tear gas developed by Project Coast designed to be used inside South Africa's borders?

Although the process of research and testing seems to indicate that this use inside the country was in fact what was intended for this particular chemical weapon, the newly-developed CR tear gas, the evidence is not enough in itself to state this with any certainty. There is, however, a second line of reasoning that ends in the same tentative conclusion, one based not on the processes of research but rather on the development of the institutional structures in which that research was conducted. In the last chapter, I argued that the development of the ambitions of the chemical and biological weapons research programme embedded in the charismatic institutional order of Project Coast could only be explained through an account of how that order itself developed. The possible ambitions of the research programme were, in other words, productively constrained by the institutional location of the programme. The possible uses of the weapons technology by either the South African Police or the South African Defence Force are part of the

explanatory framework for how that technology came to be researched, but they are only part of that framework -- much of it lies within the internal order of Project Coast itself, an order deeply opposed to the rationalised bureaucracies that characterised both of these other institutions. To explain the particular development of the research into tear gas, a description of the development of charismatic authority through the particular institutions in which that research was conducted is thus required.

At the heart of Project Coast was its charismatic leader, Dr Wouter Basson; at the heart of the South African Police's forensic laboratories, and its own chemical research programme, was Lothar Neethling. It takes no stretch of the imagination to describe Neethling himself as a charismatic individual, and it thus should come as no surprise to learn of his closeness to Basson -- Jan Lourens told the Truth Commission that he had believed that there was "a close relationship between Dr Basson and General Neethling", before adding that he had felt obliged to honour this relationship by following Neethling's instructions as if they had come from Basson himself.³⁷ This can be explained by the tendency, noted by Weber, of charismatic leaders to attract followers possessed of their own charisma.³⁸ Neethling can be characterised as one of those followers, a member of the inner circle of Basson's disciples, and therefore as having been -- without any official, bureaucratic affiliation -- a senior member of Project Coast's charismatic structure, and a powerful force within its institutional order. The primary site

³⁷ Lourens, 8 June 1998.

³⁸ Max Weber, "The Nature of Charismatic Authority and its Routinization," extracted from his *Theory of Social and Economic Organization*, translated by A.R. Henderson and Talcott Parsons (Macmillan, London: 1947) and reprinted in Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (University of Chicago Press, Chicago: 1968)

of his influence, of course, was the research conducted within Delta-G Scientific's laboratories and aimed at the production of a new form of tear gas, CR.

And so when Neethling, during his testimony to the Truth Commission, laid claim to an authority over the research into tear gas that Koekemoer, for all his expert knowledge, did not possess he was not only referring to a superior scientific knowledge, but also to a visionary authority legitimised by the charismatic institutional order of Project Coast. It was this charismatic authority that allowed him to continue to supervise the process of testing CR, both against individuals, himself included, and the environment in which it would be used, years after he had officially handed his responsibility for the research over to another institution within the bureaucratic state's order. It allowed him to give instructions both to soldiers and scientists employed by Project Coast without possessing either a rank in the Defence Force and without a position within any of the front companies -- the latter absence also shared by Wouter Basson, who never held a single directorship in any of Project Coast's front companies. And, finally, the charismatic authority Neethling held over Delta-G's research into a new form of tear gas allowed, and perhaps even obliged, him to set productive constraints on the development of the research programme; to, in other words, set the limits within which the research would be conducted and therefore to set the end uses for which it would be designed. And so, from this institutional framework, it is possible to conclude, too, that the research conducted towards producing a new form of tear gas was in fact conducted as a research programme designed to produce a new form of tear gas that would be used within the borders of South Africa, on its insurgent citizens and subjects.

This chapter, then, must conclude on a somewhat ambiguous note. The contentions of both the first chapter and the Introduction to this thesis have been deepened and strengthened by a closer study of one of the chemical and biological weapons research programme's branches, and its institutional grounds. It is increasingly clear that Project Coast operated in the context of an increasing militarisation of the South African state, where it was hard to distinguish between the activities of the Police and the Defence Force. Both could contemplate the use of chemical weapons in the various conflicts, both could use extreme force in the course of their duties, and the command structures for both were increasingly centralised in the State Security Council - as evidenced by the high-ranking meeting between the Minister of Law and Order, the Commissioner of the South African Police, the Surgeon General, and Lothar Neethling himself that brought this particular research agenda under the aegis of Project Coast. The one difference between acts of policing and acts of military force that could still be invoked, often in protest against its collapse, was territorial: the Police operated legally inside the country; the Defence Force legally outside its borders.³⁹ The production of a new, more effective and more efficient, tear gas took place firmly within this context, and its intended use was influenced by these policies of state power.

At the same time, however, the institutional order of Project Coast did not take its cue from either of these institutions: it was neither a product of the Defence Force nor of the Police. Instead, it was a charismatic institution operating through its own internal order, one that bore little reference to the world outside -- even to its own financial and

administrative setting within the South African Defence Force and late Apartheid state. Even the justifications offered by scientists such as Johannes Koekemoer appear to use the conflict in Angola, and other definitive icons of the late Apartheid state, as iconic images. These images bear no relation to the actual conflict in Angola, nor to the practice of public state power in the period. And following this, the practice of scientific research, the productive constraints on the process by which a new form of tear gas was developed, came from within the charismatic order of the Project Coast's institutional structure, rather than from any particular pressure exerted by the Defence Force, Police, or late Apartheid state's needs. The research into tear gas conducted at Delta-G was therefore insulated from its militarised context, to some still-undetermined extent.

The problematic relationship between this militarised state context and the practice of scientific research within the chemical and biological weapons research programme lies at the core of this thesis's examination of Project Coast's operations. This chapter has given some depth to that animating problem, but has certainly not answered it. To do so, more information and a still-richer portrait of the operations of Project Coast is required. The next chapter aims to provide that through a similar study of Delta-G's sister front-company, Roodeplaat Research Laboratories, and the primary research project carried out under its aegis, an attempt to manufacture a new kind of contraceptive that could be used on a mass scale, and that worked like a vaccination.

³⁹ See Cock and Nathan, *War and Society*, for several uses of this distinction in protest.

Chapter Three:

Biological Weapons Research and "Population Control"

Unlike the research conducted at Delta-G Scientific towards the production of a new form of tear gas, the research conducted at Roodeplaat Research Laboratories aimed at the development of a new form of contraceptive did not result in the successful manufacture of the intended product. No new contraceptive was ever produced. Instead, for a five year period between 1985 and 1990 a group of scientists affiliated with the front company began a process of researching and experimenting with the intention of eventually, at some point in an indefinite future, producing a new form of contraceptive. None of the scientists involved at the research level seem to have believed that such a product could be produced in fewer than twenty years.¹ Perhaps because of the absence of any material product, this research project has received relatively little attention in the literature produced, either explaining or condemning Project Coast.² Another possible reason for the lack of attention paid to this project might be that contraceptive research does not seem to fit into any definition of either chemical or biological warfare, not being

¹ For this date see the Testimony of Dr Schalk Van Rensburg to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

² This research rates no more than a paragraph in both Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme* (Zebra Press, Cape Town: 2002) and Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme* (USAF Counterproliferation Centre, Maxwell Air Force Base, Virginia: 2001).

a particularly efficient weapon to use against an invading or defending army. Part of the purpose of this chapter of this thesis is therefore to try to explain why it was that this research came to be conducted as part of the state's chemical and biological weapons research programme; and what the implications for my larger examination of Project Coast's animating design and purpose might possibly be.

This task is rendered easier by one other unique characteristic of Roodeplaat's research into contraceptive technology. Simply put, the scientists and administrators seem to have talked incessantly about the role of their own work within the larger framing ambitions of Project Coast. At the very least, the two principal administrative scientists representing Roodeplaat who testified during the Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare spent much of their testimonies attempting to explain why they had been convinced at the time that the contraceptive research they had performed had been a legitimate part of the state's chemical and biological weapons research programme.³ Although these two testimonies present two quite different explanatory accounts, a series of underlying assumptions about the nature of races, populations, and individuals in South Africa binds the two accounts together. These assumptions then, in turn, allow me to venture a description of the animating vision that these scientists and administrators perceived; as well as allowing me to describe the way in which contraception fitted into biological weapons research, and the late Apartheid state's notion of chemical and biological warfare. Before I can do that, however, the position of the two administrative scientists, Dr Daan Goosen

and Dr Schalk Van Rensburg, who gave these accounts to the Truth Commission, within the institutional structure of the front company, Roodeplaat Research Laboratories, needs to be established, as does the company's nature itself.

Roodeplaat Research Laboratories, Project Coast's second major front company, was founded in 1983. Like Delta-G Scientific, Roodeplaat was designed to provide a set of laboratory facilities within which a single aspect of the state's chemical and biological weapons research programme could be developed. Where Delta-G's laboratories were intended to be used for chemical research, however, those housed under Roodeplaat's banner were intended to be used for biological research. Also, where Delta-G consisted of one core set of laboratories, Roodeplaat Research Laboratories was an umbrella organisation that included several sub-companies. Included under the broad heading of "biological research" in Roodeplaat, thus, were companies not only dedicated to the production of biological weapons research, but also companies such as Roodeplaat Breeding Enterprises.⁴ This particular company was dedicated to the production and maintenance of the animals upon which the chemical and biological agents produced by Project Coast's various laboratories were tested. It was at Roodeplaat Breeding Enterprises, located on the same plot of land as the remainder of Roodeplaat Research Laboratories, that Delta-G tested its new form of tear gas on a baboon subject.⁵ The implications of this for the separation of the various front companies from each other and

³ Van Rensburg, 9 June 1998, and the Testimony of Dr Daan Goosen to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998 are the two testimonies referred to here. See later in the chapter for more details.

⁴ Testimony of Dr Daan Goosen to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998.

⁵ Testimony of Dr Jan Lourens to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 8 June 1998.

from the Defence Force have been described in the Introduction to this thesis; at this point it is only necessary to emphasise the interdependence of Roodeplaat and the remainder of Project Coast's front companies. The extent to which this interdependence defined Roodeplaat's operations over the course of the decade is still open to question.

The testimonies of two of the company's original directors to the Truth and Reconciliation Commission argue against the importance of Project Coast's other front companies for Roodeplaat's longer-term ambitions. For Dr Schalk Van Rensburg, the company's Director of Laboratory Services between 1984 and 1989, Roodeplaat was designed as "a model contract research company." While its initial support would come from Project Coast's other front companies, it was expected to soon branch out and make its facilities -- both those designed for laboratory work, and those designed for the testing of chemical and biological agents on animals -- available for commercial use.⁶ Dr Daan Goosen, the founder and, between 1983 and 1986, the first Managing Director of Roodeplaat, agreed.⁷ This may be explained by the fact that, while Goosen had entered Project Coast through his connections with Basson and the military, both Goosen and Van Rensburg were employed in the commercial and academic spheres before coming to work for Roodeplaat, Project Coast, and the Defence Force. Unlike the senior staff of Delta-G, for example, they were not trained soldiers -- and, beyond the patriotic duty that both men referred to in their statements to the Truth Commission, neither did they possess any particular loyalty to the South African military. The third of Roodeplaat's significant original directors, Dr André Immelman, the Director of Research and

⁶ Testimony of Dr Schalk Van Rensburg to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

Development, had been trained by the military, but was not without academic experience himself.⁸ The commercial and academic backgrounds of the company's original directors, and particularly the entrepreneurial training of Daan Goosen, helped to define the path the Roodeplaat was intended to take, towards an increasing normalisation of commercial operations -- at least as far as Goosen and Van Rensburg's testimony was concerned. This normalisation of its operations, however, did not occur.

Instead Daan Goosen was replaced, in 1986, by a new Managing Director, Dr Wynand Swanepoel. While Goosen had been trained as a researching scientist, Swanepoel had been trained as a dentist and had no research experience; and while Goosen had developed his professional expertise through working on commercial and academic research projects, Swanepoel had spent the years before he was recruited as a member of the South African Defence Force's Special Forces. He himself admitted, during his testimony to the Truth Commission, that he had no expert knowledge of the processes and practices of research, nor was he interested in continuing to turn Roodeplaat into a commercial contract research company. Rather, he told the Commission, he was appointed as a managerial specialist to sort out certain unspecified problems caused by Goosen's management practices. The intended result of his reforms, as he told the Truth Commission, was to bring the institutional order and managerial practices of Roodeplaat back in line with those of the military's other front companies.⁹ Swanepoel seems to have succeeded in accomplishing this task, as he remained

⁷ Goosen, 11 June 1998.

⁸ See the testimony Immelman presented during Basson criminal trial, as reported by Marlene Burger and Chandré Gould, *Basson Trial Report 20(b)*, 25 May - 1 June 2000.

Managing Director of Roodeplaat Research Laboratories from 1986 until its privatisation and dissolution in 1991. Throughout this later period, the majority of the time during which Roodeplaat operated, this militarist managerial order ran through the company's institutional structure. The most notable effect of this order, dealt with in the next chapter rather than in this, was a steady decline in the production of original research on the part of Roodeplaat's scientists. Swanepoel himself acknowledged this. Nonetheless, despite this decline, the biological weapons research projects begun under Goosen's management, from 1983 to 1986, continued into Swanepoel's management.

While the most notable of these projects, the research conducted into the production of a new form of mass contraception, is the focus of this chapter's study, it remains important to place it in the context of the other work done under the umbrella of Roodeplaat Research Laboratories. That work could, according to the testimony of Daan Goosen, be divided into four principal research sections.¹⁰ The research into the production of a new contraceptive was only one of these four, although it received the single largest part of the institution's funding.¹¹ The first of these sections was the one that least engages this particular chapter of this thesis, the breeding and maintenance of a small population of animals for the purpose of testing the agents produced at Roodeplaat and Project Coast's other front companies. This company seems, from Daan Goosen's testimony, to have been the core of the original plans to turn Roodeplaat into a contract research company; the descriptions offered of its operations, in testimony to the Truth

⁹ Testimony of Dr Wynand Swanepoel to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 10 June 1998.

¹⁰ Goosen, 11 June 1998.

¹¹ Van Rensburg, 9 June 1998, estimates this as a third of Roodeplaat's research funds.

Commission, emphasised the squalor, neglect, and mismanagement that forced Roodeplaat Breeding Enterprises to remain within the structures of the military.¹² Nonetheless, as the evidence presented in the previous chapter suggests, this branch of the company had a purpose within those structures. Its products, animals bred for the purposes of chemical and biological testing, can be seen to have been effectively used.

Such a statement is harder to make for the second of Roodeplaat's principal research sections, that which dealt with the production of biological toxins. This section operated under the management of Dr André Immelman, who had previously combined a period in the Defence Force with a career in academic toxicology. Unlike the other senior directors, Immelman did not testify to the Truth Commission -- rather, he sent a lengthy affidavit that included a particular document, the "*verkope lys*" or "shopping list", that rapidly gained notoriety. This document simply listed a range of biological agents, some toxic, that Immelman claimed to have used in his research.¹³ Daan Goosen, when describing the work Immelman conducted, described these agents as "dirty tricks" - a term, which emerged in the early 1990s during the trials of ex-Special Forces operatives, for the tools of assassination, poisoning, and espionage employed by the "Third Force", itself a covert government-sponsored group of military operatives.¹⁴ In their testimonies, respectively to the Truth Commission and during Basson's trial, both Goosen and Immelman said that they believed that this work had been intended for some

¹² Lourens, 8 June 1998.

¹³ This list is reprinted in full in Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme* (USAF Counterproliferation Centre, Maxwell Airbase, Virginia: 2001).

¹⁴ See Jacques Pauw, *Into the Heart of Darkness: Confessions of Apartheid's Assassins* (Jonathan Ball, Johannesburg: 1997) for an account of these trials.

kind of extra-legal use. As such, they could report little information that might show how this section of Roodeplaat had been used, and whether its operation was effective or not.

A similar difficulty surrounds the account Daan Goosen offered to the Truth Commission of the third ambition that motivated Roodeplaat's research division. The research that came under this particular structural umbrella was concerned with the production of re-engineered biological agents. This re-engineering was intended to be both genetic and molecular, depending on the particular agent. An example, offered by Goosen and the primary researcher employed, Dr Mike Odendaal, of this research was the production of a penicillin-resistant strain of anthrax.¹⁵ (Penicillin was not the primary means of treating anthrax but, if given in large enough quantities and speedily enough, could have been an effective treatment.¹⁶) A second example of the ambitions underlying this section of the company's research programme, and the most detailed example given by Goosen, was of a failed attempt to acquire a "drug effective against pigmented people only" -- a drug, in other words, that would serve as the vector for a bacterium, virus, or other toxic biological agent that the combined expertise of Roodeplaat's scientists could produce to infect and affect only non-white-skinned men and women. Although Goosen believed that it was possible to produce such a drug -- against, it is important to note, the received wisdom of the majority of population geneticists at the time¹⁷ -- neither he, nor any of the other scientists employed by Roodeplaat, had any notion of how to begin to go

¹⁵ Testimony of Dr Mike Odendaal to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 10 June 1998.

¹⁶ Eric Croddy, with Clarisa Perez-Armendariz and John Hart, *Chemical and Biological Warfare: A Comprehensive Survey for the Concerned Citizen* (Copernicus Books, New York: 2002) pp 69 details the various treatment options for Anthrax infection.

¹⁷ See Luigi Luca Cavalli-Sforza, with Paolo Menozzi and Alberto Piazza, *The History and Geography of Human Genes* (Princeton University Press, Princeton N.J.: 1994)

about producing such a substance. At the end of the first year of Roodeplaat's operations, however, an event both fortuitous and fortunate, at least for his ambitions as described to the Truth Commission, occurred. Wouter Basson presented Daan Goosen with a document he claimed to have received via the South African military attaché in London. The document offered, in Goosen's words, "a product, a bacteria, which has got the possibility of affecting, making sick, and killing pigmented people."¹⁸ The author of this document was either pseudonymous or anonymous, but his location was understood to be somewhere on mainland Europe. According to Goosen, Basson requested him to travel to London to meet with this mysterious author and ascertain the plausibility of his proposal. Basson himself denied that he had made any such request, or gave any similar order; instead, he told the Truth Commission, even at the time he believed that "there is no biological, genetic, no physical base on which one can develop an ethnic weapon," and so could hardly have treated such a project as worthy of interest. The Commission's representative, questioning Basson, was conspicuously unconvinced by Basson's denials.¹⁹ Whether he did make such a request, or not, Basson's testimony did not rule out the possibility that some experiments might have been performed on similar lines at Roodeplaat. These possible experiments were motivated by the failure of this original proposal to pan out: a week before Goosen was due to leave for London, he testified, "some people from Armscor were led into a trap in Paris and arrested by a similar kind of bait." And so, suddenly mindful of the risks involved, he did not make the meeting. This branch of Roodeplaat's research plan was thus snapped off at its root, early in its evolution.

¹⁸ Goosen, 11 June 1998.

Daan Goosen, then recalling the period in which he had been the Managing Director of Roodeplaat between 1983 and 1986, told the Truth Commission that it was soon after he had been recruited to head the front company that he had been “directly instructed” by Wouter Basson to initiate the fourth section of Roodeplaat’s research programme, a research project with the intention of developing “a product to curtail the birth rate of the black population of the country.” Goosen, according to his testimony, was at first uncertain as to the utility of such a research project, and pushed Basson to give him an explanation. He repeated this explanation, as he remembered it, in his testimony to the Truth Commission. The first element of this explanation was statistical, and conventional: the black population of the country was increasing at a rate faster than that of the white population. The second element of Basson’s explanation was conspiratorial: that the Apartheid state had, in fact, chosen to conceal the true rate of that population’s increase to prevent wide-scale panic. Goosen told the Truth Commission that Basson had then backed-up his claim by telling him that the state had falsified the last national census results: while “the figure of about 28 million was made known” to the public, the state had in fact “stopped counting the black people when they reached 45 million” and had then decided cover up the real figures because it was “not feasible to make known to people that there was 45 million blacks. It was just too many.” The conclusion that Goosen claimed to have been offered by Basson was that the rate of increase in the black population of South Africa threatened the stability of the state, the economy, the environment, and the security of the country’s white population itself. For

¹⁹ Testimony of Dr Wouter Basson to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 31 July 1998.

this reason, then, the chemical and biological weapons research programme, like every other branch of the state, had a patriotic duty to prevent this impending disaster from ever happening.²⁰

Goosen's account built on a long-standing paranoia within the Apartheid state's structures. Even from the earliest days of the Apartheid state, the modernist notions of population, population growth, population welfare, and population control that marked the segregationist policy of the pre-Apartheid state in South Africa were linked to the older, apocalyptically religious notions of race, race war, and race degeneration.²¹ By the beginning of the 1970s, this combination of demography and apocalypse had begun to be nearly hegemonic in the state's rhetoric. This situation only intensified in the ten years between the foundation of the state's Department of National Health and Population Planning in 1974 and Basson's successful attempt to convince Goosen of the necessity of contraceptive research in 1984.²² Through this period an argument made by J.L. Sadie, a demographer affiliated with the University of Stellenbosch, gained credence among the leaders of the National Party, and the late Apartheid state. This argument proceeded as follows: while the overall population growth of the country was growing, bolstered particularly by the rapid demographic increase in the black percentage of the population,

²⁰ Goosen, 11 June 1998.

²¹ See Saul Dubow, *Racial Segregation and the Origins of Apartheid in South Africa, 1919-36* (Macmillan, London: 1989) and Saul Dubow, *Scientific Racism in Modern South Africa* (Cambridge University Press, Cambridge: 1997) are both superb overviews of this period. T. Dunbar Moodie's *The Rise of Afrikanerdom: Power, apartheid, and the Afrikaner Civil Religion* (University of California Press, Berkeley and Los Angeles: 1975) details the way in which Calvinism influence the formation of the Apartheid state. Deborah Posel, *The Making of Apartheid, 1948-1961: Conflict and Compromise* (Clarendon Press, Oxford: 1991) details the modernist influence on the Apartheid state. See also the Introduction of this thesis for references.

²² Barbara N. Brown, "Facing the 'Black Peril': The Politics of Population Control in South Africa," *Journal of Southern African Studies* (Vol 13, No 3: April 1987)

the rate of economic growth was at the same time slowing down. The result of this twinned process would in any other society be a rapid increase in unemployment across all the country's population groups. Apartheid South Africa, however, was marked by a somewhat different economic organisation, one that would amplify the effects of this demographic shift, given the conditions of the international modernising economy. These conditions were twofold: first that international economies were coming to rely increasingly on intellectual labour and less on manual labour. And second, the intellectual training in South Africa had historically been restricted to the white population, while manual work had historically been the domain of the black population. Therefore, if the demographic trend Sadie had identified -- the increase of the under-educated black population coupled with the decrease of the educated white population -- was allowed to continue, then not only would the economy of the country collapse, but so too would its political order and even, as Sadie's followers implied, its environment.²³

State policy, in the years leading up to the initial conversation between Goosen and Basson that set Roodeplaat's contraceptive research programme in motion, had been first to accept the validity of this argument, and then to use several different tactics to attempt to mitigate its conclusions. The most significant of these tactics was also the longest-running: between 1960 and 1972, as a direct result of state policies, South Africa experienced a surge of white immigration, offsetting some of the already-apparent

²³ See, amongst many publications, Sadie's "Some Notes on Bantu Demography," *Journal of Racial Affairs* (Vol 2: 1955); "Population and Economic Development in South Africa," *South African Journal of Economics* (Vol 39, No 3: September 1971); *Labour Force 2000* (Bureau of Market Research, University of South Africa, Pretoria: 1981); as well as *A Reconstruction and Projection of Demographic Movements in the RSA and TBVC Countries* (Bureau of Market Research, University of South Africa, Pretoria: 1988) for an outline of his thought, and the field within which he worked.

demographic slide. At the same time, the state began to limit the availability of jobs awarded to black foreigners. But by the mid-1970s, when the economic downturn and increase in political violence both began to play a role in the decline of immigration, these measures were no longer sufficient. In 1974, the Department of National Health and Population was formed, with a significant section: the Family Planning Department. By the beginning of the 1980s, this was one of the best funded, best staffed, most efficient, and fastest growing public institutions within the state's overall structure.²⁴ The particular modernity both of these institutions, immigration controls and family planning, as well as that expressed through Sadie's neutral statistical language serves to obscure the pervasive and naturalised racism that saturated the state's euphemistic population policies, based as they were on a single assumption: black South Africans were, in the words of an earlier scholar, "probably the most prolific people on the face of the earth."²⁵

This assumption was central to the South African eugenicist movement of the early Twentieth Century.²⁶ Echoes of that movement's rhetoric can be heard in the language used by the Apartheid state to describe the country's black majority population throughout that state's period of political dominance. The same echoes can be heard in Goosen's account of the motivation Basson had offered him. Nonetheless, there are some substantial differences between the early eugenicist movements and the later population policy of the Apartheid state. For the purposes of this chapter, the principal difference lies in the attention given by the eugenicist movement to the "purification" of

²⁴ Brown, "Facing the 'Black Peril'"; Barbara Klugman, "The Politics of Contraception in South Africa," *Women's Studies Int. Forum* (Vol 13, No 3: 1990) as well as Carol E. Kaufman's "Reproductive Control in Apartheid South Africa," *Population Studies* (Vol 54: 2000)

²⁵ Theal, quoted in Dubow, *Scientific Racism*, pp 168.

the white population of the country: much attention was paid in the early part of the century to the reproductive habits of “poor whites” within the white population itself. However some of the earliest legislation passed by the Apartheid state was concerned not with reproduction within either the white or black populations of South Africa (statistically pseudo-scientifically defined by the state’s own information-collecting agencies, as I argued in the Introduction to this thesis) but rather with reproduction between the two populations: the Mixed Marriages Act (1949) and the Immorality Act (1950) both prohibited sex, and reproduction, between population groups.²⁷ To simplify a complicated subject, eugenicist ideology was primarily concerned with the internal purification of a particular racialised population group, while Apartheid ideology was more concerned with the separation of racialised population groups from each other. The eugenicists of the earlier part of this century were not nearly as concerned with the threat of racial intermixture posed by the perceived profligacy of reproduction among the black population of South Africa as the early Apartheid state was. The eugenicist interpretation of the threat implicit in that population boom was, instead, primarily moral. The black birth rate was understood to be a bad influence on the degenerate members of the white population; the lack of reproductive constraints, as perceived to exist among the black population of South Africa well into the early part of the Twentieth Century, could be imitated by degenerate specimens of the white population, thus contaminating them

²⁶ See Dubow, *Scientific Racism*, for a detail account of this movement.

²⁷ See Posel, *The Making of Modern South Africa*. For an account more focused on the internal politics of the National Party government in this period see Dan O’Meara, *Forty Lost Years: The Apartheid State and the Politics of the National Party, 1948-1994* (Ohio University Press, Cleveland: 1998)

further -- not through intermarriage, but through a moral contagion.²⁸ It should be clear that this differs in more than its details from the material prohibitions of Apartheid.

By 1984, when Goosen and Basson began to plan their contraceptive research programme, these material prohibitions on sexual intercourse between racialised population groups were no longer central to the late Apartheid state. Two years later, in 1986, both the racial sections of the Immorality Act (1950) and the Mixed Marriages Act (1949) were abolished.²⁹ The Apartheid state's population policies, as expressed through the Department of National Health and Population's Family Planning Department, still depended on the internalised, hegemonic notions of racial segregation, and of the ills of miscegenation, that had become part of a "common-sense racism" that pervaded the South African state as well as the country's society.³⁰ The hegemonic assumptions of intrinsic racial difference, particularly those tied to sexual intercourse and to what was perceived as profligate reproduction, are clearly discernable in the threat of black "over-population" described in Goosen's account of the explanation that he remembered receiving from Wouter Basson. The sexualised common-sense racism running through this account, tied too to a particular patriotic impulse, was not however the only form of the hegemonic common-sense racism of the late Apartheid state: not only was black skin a mark of sexual profligacy, but it was also a mark of absolute, essential, and possibly

²⁸ Laura Anne Stoler, *Race and the Education of Desire: Foucault's History of Sexuality and the Colonial Order of Things* (Duke University Press, Durham NC: 1995) teases some of these complex points out, not always in the direction which I identify here. Dubow, *Scientific Racism*, gives more time to those eugenicists in the 1930s and 1940s who did make prohibitions against "inter-racial" reproduction. It is not the purpose of the argument above to deny the validity of this, but rather to emphasise that, for mainstream eugenicism, inter-racial reproduction was a largely unspoken sub-set of a broader, more pressing issue: purifying, and purging, the "white race".

²⁹ William Beinart, *Twentieth Century South Africa* (Oxford University Press, Oxford: 2001) 268.

even genetic difference. This particular form of common-sense racism was present in the other research project singled out by Daan Goosen in his testimony to the Truth Commission, the research project aimed at the production of a biological agent that could act as a race-specific vector for a biological weapon's use.

That research project, designed to produce or discover a biological agent that would only work on people with a specific skin-colour, in this case black, was shaped by a hegemonic notion of racial difference closely related to that which animated Goosen's explanation of why he had come to work on contraceptive research at Roodeplaat. The similar set of foundational assumptions on which these two projects were built was noticed during the Truth Commission's Special Hearing, in which Goosen had recounted his understanding of both research projects. During the hearing, the Commission's representative asked Goosen if the two projects were in any way connected in his opinion. Goosen's answer was lengthy, and somewhat circular, but can be simply summarised: he agreed that the two were connected. The research into a race-specific biological agent was also research intended to produce the vector through which the new form of contraceptive could be introduced solely to the black population of South Africa. "To come back to your question, is it possible?" Goosen replied to the Truth Commission, "Scientifically, yes, I believe it is possible." Nonetheless, as he also told the Truth Commission, "the mechanism to get it to the people was the last thing you would research." The scientists would have to first produce the contraceptive agent itself and then determine whether "it would be viable to give it in the beer or in the maize or in

³⁰ See Deborah Posel, "Race as Common Sense: Racial Classification in Twentieth Century South Africa," *African Studies Review* (Vol 44, No 2: September 2001) pp 87-113.

the vaccinations...”³¹ The dietary and other assumption about black South Africans barely encoded in this statement also feed into the common-sense racism underlying all of Goosen’s explanatory statements. More importantly, however, the phrasing of Goosen’s statement separates the process of contraceptive research from the common-sense racism of its framing explanation. While he claimed to have believed that it would be possible to create a contraceptive that could be limited in its use to only black South Africans, he did not claim to have instructed his researchers to produce that agent.

Nor did those researchers claim, in testimony to the Truth Commission, to have received any instructions to that effect. Dr Schalk Van Rensburg, Roodeplaat’s Director of Laboratory Services and the most senior scientist involved in the contraceptive research project, told the Commission that he had been given a different explanatory rationale all together. The only surface similarity between his account and Goosen’s account was that they both claimed to have received their instructions from Wouter Basson. Van Rensburg repeated, for the benefit of the Truth Commission, the initial conversation he had had with Basson, in which Basson had laid out the reason for beginning a contraceptive research programme under the aegis of a chemical and biological weapons research programme. Its use was to be of strategic military import during the conflict in Angola, outside the borders of South Africa. At no point in this explanation did either of these two men refer to the black population of South Africa.³²

³¹ Goosen, 11 June 1998.

³² Van Rensburg, 9 June 1998.

Van Rensburg claimed that, instead, Basson told him that Jonas Savimbi, the leader of the Angolan armed movement UNITA, and South Africa's ally in the Angolan conflict, had approached the South African Defence Force with a request for strategic aid that would enable him to intensify his own armed effort. "His best troops were actually the females," Van Rensburg recalled, "but the trouble was that they were pregnant most of the time." No reason for this constant pregnancy was mentioned in the Truth Commission's hearing -- perhaps because, as with Goosen's own account, this account took a part in the hegemonic "common-sense racism" of the period. The reproductive profligacy of black Africans was exactly as likely to be perceived amongst black soldiers as it was amongst black families. But this account, unlike Goosen's, actually depends more on a second set of hegemonic ideas: that of the sexual profligacy of women. The assumption that women are the sole objects of reproductive control has been a staple of contraceptive research for as long as it has been scientifically possible.³³ Where Goosen's explanatory account is expressed in abstract terms -- demographics, statistics, and "over-population" -- this account is expressed in physical terms -- the bodies of specific women. That these women are black is not irrelevant, but neither is it the determining factor in the scientists' perceptions of their bodies as sites of conception. Combined with these material notions of racial and sexual determinants, however, the account Van Rensburg offers also adds a moral determinant, clear in his description of

³³ Linda Gordon, *Woman's Body, Woman's Right* (Penguin, New York: 1990) is a strong statement of this position. These assumptions have also been encoded in South Africa population control and family planning ideology: see Klugman, "Reproductive Control," as a particularly important statement of this position.

the second military use of a new contraceptive in Angola: "there was a bit of a problem in the refugee camps, where they [the women] were breeding too fast."³⁴

The patronising tone of that last statement resonated with that underlying Goosen's own account of the possible vehicles he would have considered for the delivery of this new form of contraceptive to the black population of South Africa: "in the beer or in the maize or in the vaccinations..."³⁵ Both accounts described black Africans purely in terms of physical needs: either in need of sexual intercourse for the purposes of reproduction, or in need of food and drink -- and not just any drink, but alcoholic beer. These assumptions together fed into another, larger, assumption: that black Africans were not capable either of deciding to limit their own fertility, or of desiring to do so. The whole of Roodeplaat's contraceptive research programme was premised upon this principle. The contraceptive agent it was expected to produce was not only intended to be used on a mass scale to control the rate of increase among the black population of the country, but was also intended to be used covertly, without the knowledge of the black South African women on which it was designed to be used. The covert nature of the product was required because -- as was clearly expressed through the common-sense racism and sexism running through the explanatory rationales offered by both Goosen and Van Rensburg -- those same black African women could not be trusted to control their own fertility either willingly or effectively. Therefore, as both Goosen and Van Rensburg claimed they had been instructed to, the late Apartheid state was responsible for their behaviour insofar as it threatened either the security of the state within the

³⁴ Van Rensburg, 9 June 1998.

³⁵ Goosen, 11 June 1998.

bounds of the country, as in Goosen's account, or outside those borders, as in Van Rensburg's account. The basis of this research was a refusal of black women's subjectivity, or agency; that was to be replaced with the agency of the Apartheid state.

It seems almost redundant to point to the fundamental inaccuracy of such a series of assumptions, and so I shall not belabour the point here. It is sufficient to state that, firstly, black women, both in South Africa and across the remainder of the continent, have always controlled their own fertility, at least throughout any of the periods for which we have any recorded history. This control did not always take a mechanical, technical, form. Often, fertility control was expressed through post-partum taboos, extended periods of lactation, and other loosely "cultural" means.³⁶ And, secondly, since the introduction of modern technical, chemical, means of contraception in the mid-twentieth century, these contraceptive technologies have been widely used by black women.³⁷ The rich sources of evidence for these two conclusions should be sufficient to demonstrate that the racist assumptions of the Apartheid state, and more specifically of the trio of Goosen, Van Rensburg, and Basson, had no basis in reproductive practice. As I have argued above, these assumptions had their roots not in material evidence but rather in a long history of an internally self-reinforcing ideology of "common-sense racism". But, despite the lack of material evidence for these assumptions, the late Apartheid state's chemical and biological weapons research programme set out to make a new form of contraceptive that would address these assumptions, no matter how false.

³⁶ Angus McLaren *A History of Contraception: From Antiquity to The Present Day* (Blackwell, Oxford: 1990) as well as Catherine Burns, "Sex: Lessons from the Past" in *Agenda: A Journal of Women and Gender* (Vol 29, Autumn: 1996)

According to Van Rensburg's testimony, there was a technology already being developed in several countries across the globe that could address the exact constraints that the assumption of this "common sense racism" produced. Basson, Van Rensburg continued, was aware of this technology and had in fact proposed that Roodeplaat's contraceptive research project begin by investigating it. To kick-start Van Rensburg's research, Basson presented him with "a little book by an Indian expert on immunological control of fertility." This form of contraceptive technology based on the stimulation of a body's immune system was, according to Van Rensburg, "the State of the Art" and the most exciting, most promising, form of contraceptive research then being practiced. It had even been "pinpointed", he assured the Truth Commission, by the World Health Organisation as "the future effective way to control populations."³⁸ And, although Van Rensburg claimed that Basson had proposed that the technology would only be designed to be used on female Angolan soldiers and refugee-camp inhabitants, this coincidence of intention could hardly have gone unnoticed. Indeed, population control was the *raison d'être* of immunological fertility control, the reason for its development.

Immunological contraception, the grail towards which Van Rensburg and the rest of his research team at Roodeplaat quested, had originally been developed in India, at the end of the 1960s, for use solely on animal subjects. Within a decade, however, it was

³⁷ Catherine Burns, "Contraception" *The South African Women's Health Book*, edited by Margaretha Goosen and Barbara Klugman (Oxford University Press, Cape Town: 1996)

³⁸ Van Rensburg, 9 June 1998.

being proposed for use on human subjects.³⁹ The technology was premised on the notion that it was possible to stimulate the body's immune system in such a way that it would interpret certain of the chemical effects of reproduction as attacks on the body's integrity that must be dealt with if the body is to survive. There are two principal immunological methods of fertility control: one that induces an immunological reaction to the presence of sperm and thus acts as a contraceptive, and one that induces a reaction to the presence of an embryo in a woman's uterus and thus acts as an abortifacient. Both methods use the female body as the site of action, utilising that body's immune system as the primary means of fertility control. Both operate by convincing that immune system that the presence of either sperm, in the first method, or an embryo, in the second, is analogous to the presence of a disease within the body, and as dangerous to the health of the whole human organism. The second method described here, the one in which a newly implanted human embryo is spontaneously aborted in response to an immune reaction, was the approach favoured by the field's most distinguished figure, Gursaran Prasad Talwar, and of almost all the programmes that followed his example. Talwar first developed a vaccine by binding beta-hCG (human chorionic gonadotropin), a hormone that aids in the implantation of an embryo in a uterus, with a tetanus toxin. "The result was a vaccine against pregnancy and tetanus," according to his press, a vaccine that fooled the immune system into treating the effects of conception as analogous to the effects of tetanus.⁴⁰

³⁹ see Judith Richter, "Beyond Control: About Antifertility 'Vaccines,' Pregnancy Epidemics, and Abuse," in *Power and Decision: The Social Control of Reproduction* (Harvard School of Public Health, Cambridge, Mass.: 1994) for a polemic, but detailed, account of this history. See also a brief article, Ganapati Mudur, "Indian women's groups question contraceptive vaccine research," *British Medical Journal* (317: 14 November 1998)

⁴⁰ Madhusree Mukerjee, "Gursaran Prasad Talwar: Pushing the Envelope for Vaccines," *Scientific American* (July 1996)

This was also the method chosen by Roodeplaat's research team, after some debate between the scientists involved.⁴¹

As the work of the feminist reproductive health specialists and medical ethicists already referenced have demonstrated, in many articles and books over several years, all contraceptive research is fraught with the possibility of abuse, both material and ideological.⁴² In many ways the possibilities of abuse inherent in this particular form of contraceptive research are even more visible than in most forms of such research. Perhaps the outstanding ideological problem posed by immunological fertility control is that thrown up by the description of conception as a disease to be vaccinated against. The clear implication of this description is that a large part of a woman's body, and the entirety of her reproductive practice, is not only a danger to herself, but also a matter of public health, best dealt with through a policy of mass vaccination. This particular set of ideological abuses coincided with the patronising common-sense sexism and racism that animated Project Coast's research into this form of contraception: black women, in the discourse outline above, were so incapable of controlling their own fertility that they were a danger not only to themselves, but to the nation as a whole. This coincidence of racism, sexism, and the unique technical possibilities offered by immunological contraception was not unique to the late Apartheid state's chemical and biological weapons research programme, however, but apparent also in the other societies where

⁴¹ Van Rensburg, 9 June 1998.

⁴² Gordon, *Woman's Body*, Burns, "Contraception", and Klugman, "The Politics of Contraception" are only a small selection of the works I have consulted for this chapter of the thesis.

this research has been conducted, most notably in India.⁴³ The scientists and administrators of Roodeplaat's own contraceptive research, Van Rensburg in particular, later claimed to have been sensitive to this coincidence. "There was no question," Van Rensburg told the Truth Commission that he had earlier told Basson, "of developing a vaccine that only works in black or that's colour or ethnic based" because "biochemically, blacks, whites, Chinese, whatever are identical." The only way to use this technology on a single specific population group would be to only give the vaccine to that group. And as Van Rensburg also believed that the agent would be "very easily detectable" and impossible to use "covertly", that limited application could only be public and obvious.⁴⁴

It is possible to discern in these concerns, raised by Schalk Van Rensburg two days before Daan Goosen's similar testimony to the Truth Commission, traces of the rationales given by Goosen for the third of the four principal branches of Roodeplaat's research programme, the research aimed at producing a biological agent that would only react with a specific racialised population group. This agent, Goosen testified, was intended to provide a vector for other biological agents: possibly viruses and bacteria that would be capable of infecting large, but racially distinct, populations. It could also be possibly used as a delivery mechanism for other biological agents, such as an immunological contraceptive. This would allow the contraceptive to infect only the black population of South Africa which was, in fact, its only desired target. And, Goosen continued, if it proved impossible to do this, the contraceptive could be delivered to the

⁴³ Dorothy Roberts's *Killing the Black Body: Race, Reproduction and the Meaning of Liberty* (Pantheon Press, New York: 1997) polemically studies this coincidence in North America.

target in other vehicles: “in the beer or in the maize or in vaccinations...”⁴⁵ While the third of these vehicles would be difficult to hide, it would not have been impossible; the first two of these proposed vehicles could have been intended to be hidden. Goosen, whenever he spoke of the delivery of an immunological contraceptive, therefore intended its use to be covert -- an intention that was clearly commonly-enough held for Van Rensburg to feel the need to explain to his leaders that it was scientifically impossible.

These two research projects, into engineered race-specific biological agents and into immunological contraceptive technology, were thus linked not only by their shared acceptance of a set of common-sense racist assumptions but also by their shared use as covert weapons to be used against the entire black population of South Africa. The rationale for immunological fertility control in any country in the world rested in part on the implicit characterisation of pregnancy as dangerous not only for the fertile woman, but also for the nation at large. In South Africa, in the 1980s, this rationale was explicitly linked to a description of the late Apartheid state as being under the threat of social, economic, and environmental destruction as a consequence of an increasingly rapid rise in the country’s black population. As a result of this, the state’s chemical and biological weapons research programme was deputed by its charismatic leader, Wouter Basson, to produce a set of biological weapons capable of addressing and controlling this threat. Somewhat circularly, therefore, contraceptive technology became defined as a weapon, and conducted as part of a weapons research programme, when Basson, Goosen, and the other leaders of Project Coast began to define conception itself -- or more accurately,

⁴⁴ Van Rensburg, 9 June 1998.

⁴⁵ Goosen, 11 June 1998.

defined the more abstract “rate of population increase” -- as a weapon used by the black majority population to destabilise the late Apartheid state and government.

The vision that animated these two research projects, a vision embedded in a history of the Apartheid’s state population policies and adoption of a “common-sense” racist ideology, was conveyed to both Goosen and Van Rensburg, according to their testimonies, by Wouter Basson himself. The charismatic leader’s presence at Roodeplaat, and the depth of his involvement with its research projects, both contrast with his relative detachment from the work conducted at Delta-G Scientific. The chemical work conducted at that company, as I argued in the previous chapter, was in part determined by the authority of Lt.-Gen. Dr Lothar Neethling, the head of the South African Police’s forensic laboratories. His role in the research projects conducted at Delta-G was broadly analogous to the role played at Roodeplaat by Basson. And so whereas the productive constraints on the development of the chemical agents produced at Delta-G were derived from Neethling’s ideological intentions, as I argued in the previous chapter, the productive constraints on the development of biological agents at Roodeplaat were derived from Basson’s own visionary intentions. The “common sense racism” that animated Roodeplaat’s research projects was thus also an integral part of the founding vision of the entire charismatic structure of the chemical and biological weapons research programme. With this in mind, it is therefore necessary to return, at the conclusion of this chapter and with the revelation of the nature of Basson’s vision, to the intention that kick-started my own study of the weapons research programme.

This thesis opened with the avowed intention of examining the workings of the late Apartheid state's chemical and biological weapons research programme not only as an end in itself, but also as a way of illuminating the possible relationship between the workings of that programme and the workings of the late Apartheid state. In the last two chapters I argued that the institutional structure of Project Coast, within which the research programme took place, was not reducible to the normal institutional order of the state's other institutions; rather, Project Coast required a separate kind of analysis, based on its particular charismatic institutional order. In this chapter I have come to argue that, despite these institutional divergences, the technological research conducted at Roodeplaat, in particular, partakes of a broad "common sense racism" that has also structured the Apartheid state's formation from 1948 onwards. This argument implied that the technologies themselves cannot be separated from their intended use, or from the charismatic vision that structured the way in which these particular technologies were addressed to the form of common-sense racism that determined that use. If we are to address the relationship between the workings of the research programme and the working of the late Apartheid state, we need therefore to examine the relationship between the vision conveyed by Basson that animated of the chemical and biological weapons research programme and the late Apartheid state's ambitious "Total Strategy".

The militarised late Apartheid state defined itself through its "Total Strategy", a term borrowed from the work of the French general Beaufre, by way of the counter-insurgency techniques developed to contain guerrilla uprisings in Vietnam, Malaysia, and Algeria. This strategy emphasised that, in modern warfare, the whole society of any

given country was involved in a perpetual struggle against destabilising forces both within and outside that society. The state, to maintain the security of its continued governance, should engage at every possible level with these perceived internal and external destabilising forces. Traditional military tactics might be sufficient to address external destabilising forces, but they were not in fact capable of addressing the internal destabilisation of the society. Instead, the state would need to police the internal tensions in the society while at the same time attempting to “win the hearts and minds” of its subjects. It was only through this multi-faceted strategy that a state could maintain its authority in the modern world. This strategy was adopted wholesale by the late Apartheid state, under the State Presidency of P.W. Botha. It was the ideological framework within which the efforts of that state to maintain its power -- whether through the public violence of the States of Emergency, the policing of insurgency, the political compromises of the Tri-Cameral Parliament, or the political capitulations represented by the state’s abandonment of some of the foundational legislation of the Apartheid state, most notably the Immorality Act (1950) and the Mixed Marriages Act (1949) in 1988 -- was expressed. The Total Strategy was, therefore, an attempt to meld together the simultaneous problem of recognising the scale of political protest, both inside and outside the county’s borders, and of justifying the state’s necessary institutional reform.⁴⁶

⁴⁶ Jacklyn Cock and Laurie Nathan, *War and Society: The Militarisation of South Africa* (David Philip, Johannesburg: 1989) remains my principal source of information on the Total Strategy. William Beinart’s *Twentieth Century South Africa* (Oxford University Press, Oxford: 2001) is a useful textbook study that concisely summarises the complex issues in a clear manner. See also Dan O’Meara, *Forty Lost Years: The Apartheid State and the Politics of the National Party, 1948-1994* (Ohio University Press, Cleveland: 1998) for a superb account of the basis for this ideology.

The Total Strategy certainly made use of some of the technologies developed under the aegis of Project Coast. If we look first at the products of Delta-G Scientific, the chemical branch of the weapons research programme, it is apparent that this use was fraught with problems. The intended use of CR tear gas, the subject of the previous chapter, was as an enhanced, more effective crowd control agent -- which, while it could possibly have been used a tactic with a broader Total Strategy, was not. Lothar Neethling testified that CR was only used "twice operationally" in the decade after it was developed.⁴⁷ This was most likely in part due to its intended use as a complete tool of crowd control, spoken of by Neethling as well as the other senior scientists involved in its development. The consequences of this are perhaps more clearly seen in the context of the (uncompleted) research intended to produce a set of crowd controlling agents out of the active chemicals in street-drugs. The desired effect of these new forms of crowd controlling gases would be to "pacify" insurgent crowds. The chemical effects of Mandrax, Ecstasy, and Cannabis were particularly studied because of their calmative effect on the human brain's chemistry. These gases were intended, in other words, to provide a crude form of mind-control.⁴⁸ This use was far more ambitious than anything proposed by the Total Strategy, if only because it did not require any form of political or social compromise. Instead it offered a vision of complete state control of insurgency. If such a weapon had been produced, it could not have been used as a tactical part of the state's Total Strategy. The production of the weapon would invalidate that Strategy.

⁴⁷ Testimony of Lt.-Gen (Dr) Lothar Neethling to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998.

⁴⁸ Testimony of Dr Johannes Mattheus Koekemoer to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

A stronger case can be made for the inability of the state's Total Strategy to make tactical use of the weapons technology developed at Roodeplaat itself. The technologies that seem to have been most used by the state's covert armed forces were both irritants and poisons, both biological and chemical. The targets of these technologies were almost always politically-active individuals, and almost never large groups of people.⁴⁹ This pattern of usage contrasts strongly with the proposed subjects of the contraceptive research conducted at Roodeplaat: intended as it was to affect a whole population, not merely individuals. Likewise, the motives behind the proposed use of this contraceptive technology and the motives behind the state's actual strategic practice are not complementary: the research conducted at Roodeplaat was aimed at the complete control of the reproductive patterns of the entire black population of South Africa and not at producing a series of stabilising demonstrations of force and political compromises. The same can be said for Roodeplaat's other significant research project, aimed at the creation of a race-specific biological agent. Neither of these principal research projects carried out under the aegis of Roodeplaat's section of the chemical and biological weapons research programme can be said to derive their justificatory ambitions from the Total Strategy practiced by the late Apartheid state during the 1980s.

Instead, the same end objective linked together the technologies produced under the aegis of the weapons research programme's various front companies. That end was a vision of complete control, offered to the programme's scientists and administrators by

⁴⁹ Pauw, *Apartheid's Assassins*, details many of these cases. Although at the time of publication the details of Project Coast had yet to be made public, it seems clear that many of the cases he describes can be linked to the programme. Certainly, the presence of Lothar Neethling in many of his accounts points towards a

Wouter Basson, Project Coast's charismatic leader. At Delta-G the research intended to produce that complete control took the form of a project aimed at the development of gases that would be capable of affecting the brain chemistry of an individual within a crowd and, in the short term while that chemical agent was sought, effectively and efficiently controlling the dispersal of insurgent crowds with a newly-developed form of tear gas. At Roodeplaat the research intended to produce that control took the form of the two conjoined projects studied in this chapter, the first an attempt to create a biological agent that would act as a race-specific vector for any other biological agent, virus, or bacteria; the second project was an attempt to produce an immunological contraceptive that would allow the state, whether covertly or publicly, to completely control the rate of the black population of South Africa's reproduction. This final project was perhaps the most ambitious embarked upon by the weapons research programme and yet, as I argue in this chapter, the close association of Wouter Basson, the programme's charismatic leader, with this particular research project suggests that it can be taken as representing the unadulterated charismatic vision of control that animated the chemical and biological weapons research programme conducted under the aegis of the institutional structure and charismatic institutional structure of Project Coast itself.

This conclusion to this chapter's examination of the weapons research conducted at Roodeplaat Research Laboratories suggests a further conclusion, one that addresses the problem that animated my own study of the programme, that of the relationship between the workings of the research programme and the workings of the state. If the

connection; as does the certainty of the Truth and Reconciliation Commission that Basson, at the very least, had regular contact with CCB agents.

examination of Delta-G's institutional workings uncovered substantial discontinuities between the charismatic order of the programme and the militarised bureaucratic order of the state, this chapter's examination of the ideological workings of Roodeplaat's varied research programmes has also uncovered substantial discontinuities between the animating vision of complete control that drove the weapons research programme and the political and military compromises that defined the late Apartheid state's Total Strategy. Neither examination sustains an argument that could position the chemical and biological weapons research programme, institutionalised through Project Coast, as an organic, seamless, outgrowth of the later Apartheid state's strategy. The relationship between the workings of the late Apartheid state and the workings of the weapons research programme now appears strained and uncertain. The final chapter of this thesis picks up on this discomfort, and thus returns to the theory-laden institutional examination that marked the opening chapter in an attempt to describe this relationship.

Chapter Four:

The Dissolution of Project Coast

The first chapter of this thesis addressed the particular origins of Project Coast's charismatic institutional order, while the following two chapters each addressed one of the front companies that helped to make up that order. This chapter returns to the broader institutional frame of the first chapter but, instead of examining the origins of that institutional order, this chapter examines its end. Or rather, to be more precise, it examines the processes that began half-way through the operation of the chemical and biological weapons research programme, between 1985 and 1986, and that culminated, in the period between 1989 and 1991, in the complete collapse and privatisation of that programme. The central period of transformation, however, is my focus in this chapter.

This builds on the groundwork laid throughout the length of this thesis. In the opening chapter I argued that, in dismissing the institutional order of Project Coast as fatally flawed and open to corruption, the other work on the field had been blinded to the historical shifts in the programme's institutional order. My rationale for studying Project Coast as a charismatic institution was to attempt to describe the opening years of the research programme without recourse to the explanatory powers of teleology. Here, in

this chapter, I return to that end and try to show how it can be as well explained using the Weberian framework as it had been by the more cynical works already published. The groundwork for the dating of the transformation I identify has also been laid in the last two chapters. As I noted in the second chapter, Delta-G Scientific underwent a change of management in the second half of 1985; while, as I noted in the third chapter, Roodeplaat Research Laboratories underwent a similar change in management midway through 1986. This near-simultaneous managerial transformation did not immediately affect the research projects I described in these two chapters -- but it is worth noting here that my accounts of both those research projects ended around 1988. The changes of management, I argue in this chapter, did in fact have effects that were not immediately obvious during the period in which both research projects were underway. The conclusions reached in both these chapters are deepened and strengthened here.

The institutional framework around which the conclusions I reached in the first chapter were structured was based on Max Weber's enumeration of the various types of legitimate authority.¹ The institutional order of Project Coast, according to my interpretation of Weber's theoretical outline, was founded on the charismatic authority embodied in one man, Dr Wouter Basson. The whole structure that developed around the chemical and biological weapons research programme was founded on the bedrock of this charismatic authority; and so its development, too, was defined by that authority. Charismatic authority "in its pure form" -- according to Weber -- however "may be said

¹ Max Weber, "The Pure Types of Legitimate Authority," extracted from his *Theory of Social and Economic Organization*, translated by A.R. Henderson and Talcott Parsons (Macmillan, London: 1947) and reprinted in Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (University of Chicago Press, Chicago: 1968)

to exist only in the process of originating.”² It cannot remain stable, but must rather perpetually reinforce itself through personal contact and the constant recognition of the original charismatic vision. “But this only lasts so long as the belief in [the leader’s] charismatic inspiration remains.”³ It is my argument in this chapter of the thesis that the managerial transformation at both Roodeplaat and Delta-G between 1985 and 1986 was part of an attempt to address the range of problems posed by the instability of charismatic authority, in general, and -- more specifically -- to address the crisis caused in such an institution when the charismatic leader, Wouter Basson, withdraws from his own role in the structure. To interpret the implications of such a withdrawal, however, we need to begin this chapter with a brief examination of Weber’s further theorising.

Charismatic authority in its purest form is antithetical to the routine structures of a bureaucratic institution, operating as it does instead through personal contact, visionary revelation, and the exercise of faith. The power to make decisions is mediated strictly through personal contact and charismatic revelation, and not through either expert training or bureaucratic promotion. Nonetheless, despite the validity of this ideal characterisation of charismatic authority, if an institution founded on such an authority is to be anything other than a transitory phenomenon, and if it is to outlive the initial force of the charismatic leader’s vision, that institution must come to be organised in a way that would ordinarily be more closely associated with a bureaucratic or hierarchical organisation. Charismatic authority is not stable, nor are the institutions founded on it; if

² Max Weber, “The Nature of Charismatic Authority and Its Routinization”, extracted from his *Theory of Social and Economic Organization*, translated by A.R. Henderson and Talcott Parsons (Macmillan, London: 1947) and reprinted in Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (University of Chicago Press, Chicago: 1968) pp 54.

these institutions are to stabilise, they must either be traditionalised or rationalised.

Weber's work, on which much of the theoretical weight of this thesis rests, insisted that this process -- contradictory as it may at first seem -- must occur if a charismatic institution is to continue operation. Weber proposed two reasons for why a charismatic institution would need to continue operation after the inevitable destabilisation of its charismatic leader's authority, either through his discreditation or through his death.⁴

The first of the two reasons that Weber proposed was that the continued operation of the institution that had been founded on a leader's charismatic authority would benefit "the ideal and also the material interests of the followers in the continuation and continual reactivation of the community" that had been formed around that original charismatic leader.⁵ In the case of Project Coast, which after all is the charismatically founded institution with which this thesis is solely concerned, those interests could have been characterised as those related to the continued operation of the chemical and biological weapons research programme. And, more exactly, with a continued commitment to the principles that structured the particular ambitions of that weapons research programme: mainly, the production of a set of political technologies based on a "common-sense" notion of racial difference and political behaviour. These technologies, studied in the two previous chapters, were explicitly framed by the scientists and administrators of Project -- the "followers" referred to in Weber's more abstract characterisation -- in relation to the broader project of the late Apartheid state, whether through reference to its involvement

³ Weber, "The Nature of Charismatic Authority," pp 52.

⁴ Weber, "The Nature of Charismatic Authority," is the primary source for this theoretical exegesis. See Chapter One and the Introduction of this thesis for further references.

⁵ Weber, "The Nature of Charismatic Authority," pp 54.

in the Angolan conflict or through reference to the political turmoil within the country. If these ideal and material interests were to be continued as the base for Project Coast's institutional rationalisation, then I would argue that its relationship with the late Apartheid state would be clear, and clearly significant.

If, on the other hand, the institutional rationalisation of Project Coast followed from the second of the two reasons that Weber proposed for the continued operation of a charismatically founded institution, then that relationship would be somewhat different. This second reason was described by Weber as benefiting "the still stronger ideal and material interests of the members of the administrative staff, the disciples or other followers of the charismatic leader in continuing their relationship." To be more specific, Weber continued, this relationship would continue "in such a way that both from an ideal and a material point of view, their own status is put on a stable every-day basis."⁶ In the case of Project Coast's administrators, those interests would be primarily material. More exactly, these interests would require the accumulation of material means -- cold hard cash, to put it baldly -- sufficient to ensure that the programme's administrators continued to possess a certain high standard of living that they could not otherwise have. The achievement of these material interests was not dependent on the continued operation of the chemical and biological weapons research programme, or the continued allegiance to its animating ambitions. Rather, the achievement of material security could be achieved more simply by maintaining the façade of the research programme while turning the institutional structures of its various front companies towards the production of profit. And if it was these ideal and material interests that were proposed as a base for Project

Coast's possible institutional rationalisation, then I would argue that Project Coast did not in fact take its cue from the conduct and ideology of the late Apartheid state through its period of operation, but rather from a particular source that had to be removed before the process of the institution's eventual rationalisation could even begin.

That source of possible inspiration is, in the theoretical scheme that Weber sketched out, the original charismatic leader of the institution that is now attempting to stabilise itself in his absence. That absence, Weber simply points out, is inevitable: sooner or later a charismatic leader will die, or otherwise be removed from the networks of personal contact and discipleship that define a charismatic movement. The person in question here, the charismatic leader of Project Coast, was Dr Wouter Basson. If I am to describe a situation in which the institutional structure of Project Coast could be considered as a candidate for rationalisation, then I need to describe first how Basson -- who remains among the living at the time of writing -- came to be removed from the networks of personal contact and discipleship that determined Project Coast's decision-making structures and, therefore, structured the development of the chemical and biological weapons research programme that was conducted within those structures. Fortunately, his testimony during his criminal trial provides exactly that description.

In his testimony during his criminal trial, Wouter Basson claimed that between 1984 and 1986 he had attended several meetings of an international group of arms traders, specialising in chemical and biological weapons. Basson testified that he had approached this group -- which he called, variously, the "CBW Mafia" and his financial

⁶ Weber, "The Nature of Charismatic Authority," pp 54.

“Principals” -- under the guise of a simple sanctions-busting South African businessman and arms trader. He told Judge Hartzenberg that, despite all the international resources at the command of this shadowy group, his cover was never penetrated. Even in 1986, when he testified that this group asked him to be their representative in several money-laundering operations, he believed that all the members of the group believed him to be nothing more than a businessman. He emphasised that he in no way represented the South African state at these meetings. Instead, as he told the Court, he turned the contacts he made through this group to the state’s advantage. The various front companies of Project Coast were used to launder the group’s money while, at the same time and *quid pro quo*, purchasing the latest in research technology for those companies’ use. This was all conducted with the approval of Surgeon General Nicol Nieuwoudt, Basson testified, and, he continued, it was considered by that man to be in the greater interests of the country that Basson continue his involvement with this Chemical and Biological Weapons Mafia. Of course, Basson argued, this meant that that for years after this first substantial interaction, in 1986, his attention was increasingly diverted away from the development of the state’s chemical and biological weapons research programme, and from the institutional development of Project Coast. He was rather concentrating, throughout this period, on an international world of covert action.⁷

If Basson’s testimony can be taken at face-value, his statements would certainly constitute proof of his increasing detachment from the personal networks of charismatic

⁷ Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa’s Chemical and Biological Warfare Programme* (Zebra Press, Cape Town: 2002) provides an overview of this period of Basson’s testimony, drawing on their regular reportage of the trial in their *Basson Trial Reports*. The entire

authority that constituted the original institutional order of Project Coast. The objections raised against his testimony are substantial enough that they must be addressed before this conclusion can safely be drawn. The first objection against this account is its contradictory vagueness: Basson referred, throughout his testimony, to two groups as his “Principals”. One of these was the so-called Mafia, his financial Principals, and the other was the Defence Force’s General Staff itself, his ideological Principals. Although Basson justified this by splitting the financial and ideological aspects of his work, the confusion he demonstrated could easily cause doubts to form. The second objection against this account, both harder to demonstrate and more damning if true, is that it serves only as Basson’s means of justifying the financial misconduct proved by the Prosecution in his criminal trial. This would then explain why neither the Chemical and Biological Weapons Mafia or the mysterious Principals appeared in Basson’s earlier testimony to the Truth Commission: his account was manufactured to address the Prosecution’s evidence and arguments. To distance Basson, in other words, from the financial misconduct of which he was otherwise clearly guilty. This second objection comes closest to my personal interpretation of these statements. Neither objection, however, was accepted by the judge presiding at Basson’s trial. Judge Hartzenberg’s final judgement found Basson innocent of all charges laid against him, explicitly stating that Hartzenberg had given particular credence Basson’s account of his financial dealings with the so-called Mafia. His account was more convincing than that of the sceptical Prosecution.⁸ Although the proof of Basson’s increasing detachment from the personal networks of charismatic authority that constituted the original institutional order of

run of reports between numbers 48 and 56, 23 July 2001 - 28 September 2001, contains fragments of this argument, and were consulted.

Project Coast would stand up in court, it is tainted by the legitimate objections to Basson's accounts.

Nonetheless, whether Basson's attention was diverted by his increasing involvement in an international world of illicit weapons trading or whether it was diverted by the tempting possibilities of financial misappropriation, the fact remains that the chemical and biological weapons research programme -- the supposed *raison d'être* of Project Coast -- occupied far less of his personal attention after 1987. He distanced himself from the network of personal contacts that had built up and maintained his charismatic authority. And, in doing so, he brought about the end of the charismatic institutional order that had thus far worked to produce the structure of Project Coast, as well as the research programme embedded in that structure. The chemical and biological weapons research programme lost its charismatic leader, by his own testimony, neither through his discreditation nor through his death, but rather through his increasing inattention. This was as effective a loss of charismatic legitimacy as his death would have been; and it allows us to argue about the project's possible routinisation.

Without access to the charismatic authority derived from Basson's presence to legitimise the decisions made by Project Coast's administrators, those administrators were faced with a dilemma. Either they could choose to continue in the patterns set by the last several years of legitimised decision-making, allowing momentum to carry the programme forward until such a time when Basson would return and reanimate the programme. Or they could choose to begin to institute a series of far-reaching structural

⁸ Burger and Gould, *Secrets and Lies*, quotes at length from Hartzenberg's judgement.

changes with the aim of ensuring the programme's continued operation after the complete withdrawal of Basson's legitimising charisma. According to Weber's scheme, this second choice could either be motivated by a desire to extend and continue the development of the chemical and biological weapons research programme in the interests of the late Apartheid state, or it could be motivated by a desire on the part of the administrators of the programme to enrich themselves into financial security. The process of re-organisation began before Basson's charismatic authority turned in another direction, however, when he appointed two new directors to the senior management positions of both Roodeplaat Research Laboratories and Delta-G Scientific. The implications of this change, and of Basson's role in it, can only be addressed through a narrative account of these changes, and of the consequences they entailed.

The change in the institutional order of Roodeplaat Research Laboratories came with the appointment of Dr Wynand Swanepoel to the position of the front company's Managing Director, replacing the company's founder Dr Daan Goosen. Swanepoel had been trained as a dentist, rather than as a research scientist, and had spent most his career as an administrative expert rather than as a practicing medical technician. In his testimony to the Truth Commission, Swanepoel explained much of the difference between Goosen's managerial practice and his by recourse to this difference in training and experience. He was not, in other words, recruited for his ability either to conduct research, or to manage the practice of research within the company, but rather to resolve "a management crisis". Swanepoel told the Truth Commission that Wouter Basson had approached him, late in 1985, and told him that "the management aspects and the co-

ordinating aspects in terms of personnel and finance” at the military front company, Roodeplaat Research Laboratories, “had become a bit of a problem.” Basson, according to Swanepoel’s later testimony, proceeded to ask him to take over the management of the company, replacing Daan Goosen who was “out of hand” managerially. “They had problems with the control thereof,” Swanepoel recalled. He also recalled that he was happy to accept, having been assured by Basson that his appointment was supported by the front company’s other senior directors, including Dr André Immelman and Dr Schalk Van Rensburg. And so, by the middle of 1986, Wynand Swanepoel had become the Managing Director of Roodeplaat Research Laboratories.⁹

Goosen, however, did not take this transformation lying down. He claimed to have worked administrative miracles in his time as managing director of Roodeplaat. In under three years, from the end of 1983 to the beginning of 1986, he had supervised the building of the laboratory facilities, the employment of the administrative and scientific staff, and set the first research projects in motion. Two audits had been conducted in those years, without any signs of financial misappropriation. He had even had, he told the Truth Commission in his testimony, a day after Swanepoel’s, the trust and support of the remainder of the front company’s directors.¹⁰ Schalk Van Rensburg, speaking before either Swanepoel or Goosen’s testimony, certainly claimed to have supported him in this period, and to have mistrusted the motives behind Swanepoel’s appointment.¹¹ Goosen

⁹ Testimony of Dr Wynand Swanepoel to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 10 June 1998.

¹⁰ Testimony of Dr Daan Goosen to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 11 June 1998.

¹¹ Testimony of Dr Schalk Van Rensburg to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 9 June 1998.

argued that his replacement was not motivated by the failure of his managerial practices, but rather by a personal animosity held by Basson against him. Goosen testified to the Commission that he believed that this animosity had led to Basson, and his circle of disciples, to manufacture a series of accusations against him: that he had mismanaged his front company, that he had misappropriated the company's finances for his own ends, and, most seriously, that he had compromised the covert nature of the chemical and biological weapons research programme by an unspecified major security breach. While Goosen admitted in his testimony that each of these charges had some foundations in the truth, he argued that in none of the cases were those foundations sufficient to require his dismissal. The only explanation he could offer was that he believed that his ambition for the front company -- to turn Roodeplaat into a "model contract research company" independent from the Defence Force -- did not coincide with Basson's ambitions, whatever they might have been. And so Goosen believed, as he told the Truth Commission, that he had been replaced by Wynand Swanepoel, who admitted knowing nothing of research, because Swanepoel was more pliable than him.¹²

If Goosen's somewhat self-serving argument is accurate in implying that Basson had triggered the managerial transformation of Roodeplaat to prevent its impending independent operation and to replace a competent administrator with a loyal one, then it also implies that the inevitable rationalisation faced by Project Coast in Basson's absence was constrained by a strong institutionalised discipleship. This means that, in the process of rationalisation, the institution's rationalised interests were set by Basson's lead even after the central focus of his attention had shifted away from the chemical and biological

¹² Goosen, 11 June 1998.

weapons research programme. Before the further implications of this are examined, however, the accuracy of Goosen's argument must be addressed. There are two particular sources to turn to in support of his broader argument, even if both sources do nothing to support the aggrieved tone of Goosen's testimony. The first of these is the testimony of Schalk Van Rensburg regarding the nature of the managerial transformation at Roodeplaat, a source which deepens the details of Goosen's own testimony. The second of these sources is not concerned with Roodeplaat, but rather with the roughly contemporaneous managerial transformation that took place at Delta-G Scientific, the other principal front company of Project Coast, between 1985 and 1986.

In his testimony to the Truth and Reconciliation Commission, Schalk Van Rensburg described his understanding of the replacement of Goosen by Swanepoel in the phrase that gave this thesis its title: it was, he said, "the end of the future." Daan Goosen, Van Rensburg told the Commission, had been a source of inspiration to him. They had worked together to draw up the research agenda that Roodeplaat was to follow; they had also worked together to draw up the agenda for the institutional transformation of Roodeplaat into a commercial research company. He had known where he stood with Goosen, and had admired the man's managerial ability. Van Rensburg testified that when he had heard that he was to be replaced by Swanepoel, a dentist promoted out of the military's Special Forces, he hadn't been able to believe it. "There people are not suitable for administering a group of scientists," he told the Commission, claiming to be repeating a statement he had made to Basson at the time. "Military people come with their mythical super leadership style." And, he continued, while "this style is necessary if

you want to convince a lot of otherwise sensible youngsters to become cannon fodder,” it was “not suitable in a scientific milieu.” Indeed, Van Rensburg told the Commission, it was antithetical to a scientific research company and so, in the absence of Goosen’s inspired leadership, the company was unable to continue in its planned path. Swanepoel, in his opinion, was incapable of understanding the company’s work and so contented himself with passing on instructions from Basson.¹³ Van Rensburg’s account thus seems to support the principal contention made by Goosen during his testimony: that he was replaced not because of complaints about his management, but because his ambitions for the company conflicted with Basson’s.

Goosen also argued that Basson chose to appoint Swanepoel in his place, because of Swanepoel’s dependable loyalty, and ignorance. Because Swanepoel, Goosen argued, was not capable of understanding the practices of research carried out at Roodeplaat, he could be depended upon to simply follow Basson’s orders. Swanepoel’s disconnection from the company’s research practices was attested to not only by Schalk Van Rensburg, but also by Swanepoel himself: he told the Truth Commission that he “did not have the ability to do that.”¹⁴ A similar ignorance was confessed to the Truth Commission by Dr Philip Mijburgh. Mijburgh had been appointed as the Managing Director of Delta-G Scientific six months before Swanepoel was appointed to the same position at Roodeplaat. He, too, was appointed to replace an earlier, founding, director who was accused of unspecified managerial incompetence. Despite being pressured by the Truth Commission’s representative during his testimony, Mijburgh could not say exactly why

¹³ Van Rensburg, 9 June 1998.

¹⁴ Swanepoel, 10 June 1998.

Basson had appointed him to this position. The closest he came to answering the question was through reference to the long-standing friendship between Wouter Basson and himself. They had become friends at the University of Pretoria, where Mijburgh was studying medicine at the same time as Basson was completing his graduate research. They “played squash” and went running together. They “socialised” together. And when Basson went on to found Project Coast, his friendship with Mijburgh continued. Mijburgh, however, did not remain in medicine: instead, after completing his degree, he enrolled in an accountancy programme by correspondence from the University of South Africa, “because commerce interested me more than medicine did.” This commercial qualification, combined with a medical degree, seems to have rendered Mijburgh the perfect candidate for directorship of Delta-G -- it is worth remembering, however, that his lack of interest in medicine meant that he did not continue to practice research after qualifying and so, despite the relevance of his qualifications, he was no better equipped to manage a research programme than Wynand Swanepoel, a dentist. Even in his sworn testimony, Mijburgh acknowledged that he was more likely hired thanks to his friendship with, and loyalty to, Basson than because of his qualifications.¹⁵

The period between the end of 1985 and the beginning of 1987 was therefore a watershed period for the institutional order of Project Coast. Despite the self-serving motives apparent in his testimony, Goosen’s characterisation of the institutional transformation that occurred during the watershed has been sufficiently corroborated by the supporting testimonies of Schalk Van Rensburg and Philip Mijburgh to be used as a

¹⁵ Testimony of Dr Philip Mijburgh to the South African Truth and Reconciliation Commission’s Special Hearing into Chemical and Biological Warfare, 18 July 1998.

broadly accurate describe of this period. The detail of that description can be rendered as an abstract series of events: first, Basson orchestrated the removal of the original Managing Directors of Project Coast's two largest front companies, Delta-G Scientific and Roodeplaat Research Laboratories. He then replaced these two directors with two of his choosing, chosen both for their loyalty and their ignorance of research practice.

If this scheme is correct, then this same watershed period should also have seen a transformation in the nature of the research conducted under by the state's chemical and biological weapons research programme under the institutional aegis of Project Coast. Indeed, given the two directors' experience, no substantial research project should have been begun at either front company after the completion of the managerial transformations at both Roodeplaat and Delta-G during 1986. This situation lasted until the privatisation of the two companies in 1991, and the effective end of Project Coast. But, if this characterisation of the research programme is correct, the state's chemical and biological weapons research programme could be said to have ended almost five years before the institutional rollback of Project Coast, as detailed in Stephen Burgess and Helen Purkitt's monograph on the subject.¹⁶ This would mean that, since the period from 1987 to 1991 was marked by the Basson's increasing detachment from the networks of personal contact that had ensured the maintenance of the charismatic vision that had originally animated weapons research programme, the chemical and biological weapons research programme was purely a manifestation of Basson's charismatic authority and not an intrinsic, structural, part of the late Apartheid state's racial ideology. Before fully

¹⁶ Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme* (USAF Counterproliferation Centre, Maxwell Air Base, Virginia: 2001)

accepting this conclusion, however, we must be certain that the predicted decline in research production did in fact occur at both of the two major front companies.

At Delta-G Scientific no large-scale research projects seem to have been begun after 1986; and only one seems to have originated in the watershed period between 1985 and 1987. That research project, aimed at the production of a crowd-control gas derived from common street drugs, rested however on an earlier proposal by Lothar Neethling, the head of the South African Police's forensics laboratories.¹⁷ The initial progress of this research project has been detailed in the second chapter of this thesis. That progress climaxed in 1988, when Dr Johannes Koekemoer carried out experiments using a gaseous form of methaqualone, the active chemical in the street-drug Mandrax. These experiments were unsuccessful, as the gas had little or no noticeable effect on the test subjects. Koekemoer was however unable to testify to any further tests conducted after that year, either on the methaqualone gas, or on either the proposed gases formed from the active chemicals in cannabis and Ecstasy.¹⁸ Instead, as was revealed during Koekemoer's testimony and then extended during Mijburgh's, Delta-G seems to have turned towards the production and encapsulation of the drugs themselves. Mijburgh claimed not to know of any controls his company had put into place to restrict the possible disposal of these encapsulated drugs.¹⁹ Wouter Basson, during his criminal trial, testified that many of these encapsulated drugs were sold on the international market to raise funds for Project Coast. These deals, he told the court, were approved by the

¹⁷ Testimony of Lt-Gen. (Dr) Lothar Neethling to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 11 June 1998.

¹⁸ Testimony of Dr Johannes Matteus Koekemoer to the South African Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 9 June 1998.

state itself -- but, as with his earlier statements, the individuals he named as having given their approval were dead at the time he testified.²⁰ The reason behind the production of drugs indistinguishable in chemical content or packaging from their counterparts available on the streets remains a matter for speculation. Whatever that reason might be, the fact is unaltered: the one substantial chemical weapons research project developed at Delta-G after the successful production of CR tear gas degenerated from the production of chemical agents to the production of street drugs. At this particular front company, Delta-G Scientific, the transformation in managerial practices, combined with the scientific ignorance of its new director, thus resulted in a collapse of its branch of the chemical and biological weapons research programme.

A similar situation seems to have existed at Roodeplaat Research Laboratories. All four of its principal research directions, detailed in the previous chapter, were set in place before 1986. In none of the various testimonies offered by Daan Goosen, Schalk Van Rensburg, Wynand Swanepoel, and Dr Mike Odendaal -- a scientist working on creating viral cultures for Roodeplaat -- was there any mention of a new research project being started after 1986. Instead Swanepoel informed the Commission that he was utterly ignorant of any research projects that occurred under his management: "I can't remember anything specific," he said.²¹ Van Rensburg, as has already been detailed, told the Commission that this period was "the end of the future" and, by the end of the decade, he had been driven to resign from the front company. The contraceptive research

¹⁹ Mijburgh, 18 July 1998.

²⁰ Reported in Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme*. (Zebra Press, Cape Town: 2002)

²¹ Swanepoel, 10 June 1998.

project, of which he was the nominal head, made no substantial process in this period, despite prompting from the company's management.²² Odendaal testified that, like Van Rensburg, he "did not like the way we were being managed" in this period. This was because he, and his division, were simply left alone to continue producing biological agents at their own pace and in their own order of priority. They produced several agents between 1987 and 1991, Odendaal testified, but their work seemed entirely unappreciated, and ignored, by the company's management.²³ The pattern running through all these accounts is clear: after 1986 the research work done within Roodeplaat's laboratories was quietly neglected by the company's management. It was also, more exactly, neglected by the charismatic authority embodied in the company's earlier administrative leaders, and expressed through the constant presence of Basson in Roodeplaat's hallways. The effect of this neglect was to cause the research work conducted to either simply continue in its same old paths, or to grind to a slow halt. Without the possibility of productive intervention by the management, and without the animating vision offered by Basson's presence, Roodeplaat's branch of the chemical and biological weapons research programme, like Delta-G's branch, withered away.

The speed with which the research programmes conducted at both Delta-G and Roodeplaat abandoned the animating ideals of the chemical and biological weapons research programme suggests that those ideals were never fully internalised by those institutions, or by the individuals employed in those institutions to conduct that research. Instead, the conviction that drove the way in which the research programme was

²² Van Rensburg, 9 June 1998.

developing, from 1981 to 1986, was held quite lightly. The research conducted after this period, as illustrated above, turned with ease away from the production of technologies shaped by a hegemonic common-sense racism shared with the late Apartheid state. This hegemonic racism seems, in the case of Delta-G at least, to have been replaced by what can only appear to be an animating profit-motive. It is difficult to imagine what other purpose the production of large quantities of street-ready drugs could have other than for sale, and thus for profit. The transformation in the nature of the research conducted at Project Coast's various front companies thus appears to have been determined jointly by the collapse of the ideological interests animating the original research programme, and by the material interests of the scientists and administrators involved in the later institutionalisation of that programme. This is strikingly similar to the description offered by Weber of a process of institutional rationalisation that, in the absence of a continued charismatic vision, is driven by its administrators' material greed.

Indeed, the testimonies offered both at the Truth Commission's Special Hearing and, in far more detail, during Basson's criminal trial detailed example after example of financial impropriety on behalf the administrators of Project Coast within the exact same timeframe. These testimonies formed the basis of prosecution's case in the criminal trial that Basson had committed gross financial fraud -- a charge which Judge Hartzenberg, presiding at the trial, dismissed. Hartzenberg did make explicit in his judgement that, while he believed the balance of evidence was in favour of Basson's innocence, he also believed that most of the witnesses testifying to their own complicity in cases of

²³ Testimony of Dr Mike Odendaal to the Truth and Reconciliation Commission's Special Hearing into Chemical and Biological Warfare, 10 June 1998.

corruption, embezzlement, and fraud were telling the truth in that regard. Financial misconduct was rife in the institutions of Project Coast in its last years of operation, Hartzenberg concluded.²⁴ And, whether Hartzenberg was correct in judging Basson untainted by this corruption or not, it seems clear that the pervasive appropriation of the various front companies' finances by their administrators can be traced to the destabilising effect Basson's withdrawal had on the organisation of Project Coast. As a sign of this, it is apparent that the individuals who profited the most from the financial reorganisation of Project Coast were those individuals appointed by Basson in the watershed of its institutional transformation between 1985 and 1986, Philip Mijburgh and Wynand Swanepoel. A single cluster of significant examples serves to illustrate this.

The decision to privatise Delta-G Scientific and Roodeplaat Research Laboratories, the two largest front companies for the chemical and biological weapons research programme, was taken in April 1990. In the following years, the directors of these two front companies exercised the option to buy the controlling shares in their companies. The principal stakeholders in each of the two companies were their Managing Directors, Mijburgh and Swanepoel, and so they both gained the largest percentages of their relevant shares. The approximate cost, calculated by Burgess and Purkitt in their monograph, of the two purchases combined was R350 000 in the currency of the period. (This was approximately US \$120 000 in 1990.) Neither Mijburgh or Swanepoel retained the shares that they had bought, however. Within two years of their respective purchases, both Delta-G and Roodeplaat -- now privately owned by their Managing Directors -- were sold once more, this time to foreign investors. The combined

²⁴ See Hartzenberg's judgement quoted in Burger and Gould, *Secrets and Lies*, esp. pp 194-199.

sale prices, again estimated by Burgess and Purkitt, totalled R50 million in the currency of the period. (This was approximately US \$17 million.) It hardly needs to be said that the profit margin on these two transactions was remarkably large.²⁵ (It was certainly large enough to attract the attention of the Office of Serious Economic Offences, which proceeded to launch an investigation into the deals that eventually resulted in the state's covert chemical and biological weapons research programme becoming common knowledge.²⁶) It also hardly needs to be said that the two individuals profiting most greatly from these transactions were the same two individuals appointed by Wouter Basson during the transformation of Project Coast between 1985 and 1986.

Once these varied accounts have been weighed and considered, it seems clear that the second reason for a possible rationalisation of a charismatic institution, as described by Max Weber, better represents the way in which Project Coast came to develop after the removal of Basson's originating charisma.²⁷ The process of research came to an end with the re-organisation of Project Coast's institutional structure, and was replaced by a process of financial accumulation on the part of the research programme's administrators. The transformation of Project Coast that occurred during the watershed period between 1985 and 1986 and then continued to develop in the five years following was motivated not by an ideological commitment on the part of its administrators to the continuing operation of the chemical and biological weapons research programme but rather by a desire on their part to ensure the normalisation of the processes of financial accumulation, and thus of a certain standard of living. These processes include both examples of petty

²⁵ Burgess and Purkitt, *The Rollback*, pp 58-59.

²⁶ This investigation is consistently referred to in Burger and Gould, *Secrets and Lies*.

embezzlement and also examples such as the one given above of astonishing financial misconduct. The implications of this recognition, at least as revealed by this chapter's argument, for this thesis are twofold.

The first of these requires a return to the thesis's opening chapter. Three-quarters of the way through that chapter, before explaining the theoretical ideal-type of charismatic institution and showing how Project Coast could be described in its terms, I argued that the descriptions offered by Stephen Burgess and Helen Purkitt's monograph, *The Rollback of South Africa's Chemical and Biological Warfare Programme*, and more particularly by Marlene Burger and Chandré Gould's book, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme*, of the institutional order and workings of Project Coast were to some degree anti-historic.²⁸ I argued that this was because both accounts read the institutional order of Project Coast backwards, assuming that the nexus of financial mismanagement, managerial disinterest, and cynical deal-making that defined the institution's very final years did in fact describe the entire period of its operation. I stated then that I believed that this was a misapprehension, and that a historical examination of the earliest years of the chemical and biological weapons research programme's operation, one that tried not to second-guess its eventual outcome and thus produce a teleology of inevitable financial corruption, would produce a very different description of Project Coast's institutional order. The description that I proposed took Max Weber's enumeration of the possible modes of legitimate institutional authority as its starting point, and derived from it an identification of Project Coast with the ideal-type of institution founded on charismatic

²⁷ Weber, "The Nature of Charismatic Authority."

²⁸ Burgess and Purkitt, *The Rollback*. Burger and Gould, *Secrets and Lies*.

authority. The conclusion that I took from this process was that, regardless of its final collapse towards fraud, the institutional order of Project Coast was founded in a certain sincerity, with the original intent to produce the chemical and biological weapons that it was expected to develop. The charismatic institutional order, furthermore, helped to define the ways in which the research programme itself developed, and the particular kind of weapons technology that it tried to develop.

This chapter has now brought this thesis to the point at which the institutional order of Project Coast can be said to have collapsed in on itself. While this was the starting point for the other works' description of the institutional order of Project Coast, it is the end of my history of that order's origin, transformation, and decline. The complementary narrative of the research programme's development within that institutional order has supported this history; and, considered together, they confirm my original contention. The fact that Project Coast's institutional structure can be shown to have undergone a period of transformation between 1985 and 1986, as I have detailed at length in this chapter, and that the beneficiaries of that transformation were also the beneficiaries of the later processes of financial mismanagement strongly suggests this interpretation. When viewed beside the gradual abandonment of the ideals animating the chemical and biological weapons research programme through the same period, this interpretation of the institutional history of Project Coast gains yet more credibility. The conclusion of this line of argument can only be that the development of Project Coast's institutional was shaped most by the charismatic authority of Wouter Basson, and the

corresponding genuine belief in the vision his disciples perceived him to represent. Its origin was vouchsafed by his authority, and its decline lay in its gradual withdrawal.

The second implication of the recognition that Project Coast underwent a radical transformation in the second half of the 1980s, a transformation that resulted in the weapons research programme's collapse, is that that research programme's ideals were defined internally rather than derived from the state's broader ideology of governance. I have already argued, in the previous chapter, that the ideal of complete control that animated the type of weapons research conducted at Project Coast was not compatible with the Total Strategy practiced by the late Apartheid state through the 1980s. In this chapter I have argued that the collapse of that ideal, after the watershed period of institutional transformation between 1985 and 1986, suggests that the stimulating effect of Wouter Basson's charismatic authority was essential to the continued operation of that ideal. The decline into financial misappropriation suffered by the institutional order within which that research was developed only reinforces this, even when interpreted through the lens of Weber's theory of the rationalisation of charismatic authority given above. The conclusion that arises out of the examination, pursued through the length of this thesis and culminating in this chapter, of the research programme's actual history of development is unmistakable: the research practiced at Project Coast was determined most by the perceived vision of its charismatic leader, and not by the state's practice.

This argument thus leads to one inevitable conclusion: that the chemical and biological weapons research programme, despite being funded and sponsored by the late

Apartheid state, did not derive either its legitimising rationale or its institutional structure from the policies and ideologies of that state. Rather, the vision that animated the research programme was a product of the reception given by the programme's scientists and administrators to Wouter Basson's charismatic authority. The common-sense racism that shaped the scientific ambitions of the research programme were filtered through his vision, which in turn may have been derived from the same source as the common-sense racism that pervaded the late Apartheid state. It was not of a piece with the animating hegemonic racism of that state, however. This conclusion is vouchsafed by the collapse of that animating force with the removal of Basson's personal charisma and vision while, at the same time, the late Apartheid state was attempting to use the various products of this weapons research programme, and others, to attempt to secure the continuance of these hegemonic ideals. The weapons research programme was not a natural growth of the late Apartheid state's militarisation of politics; but rather an aberration that exploited an opportunity opened by that process.

The relationship between the workings of the chemical and biological weapons research programme and the workings of the late Apartheid state that drove the concerns of this thesis can therefore now be finally described. Although funded by the late Apartheid state, and although situated within the institutional framework of the South African Defence Force's chain of command, Project Coast did not derive its institutional order from the militarised bureaucracies of both the state and the Defence Force. And, although making use of a similarly hegemonic, and thus shared, set of notions around the essential nature of race, sex, population, and difference, neither was the research

programme itself simply derived from the requirements of either the state or the Defence Force. The late Apartheid state provided the broader political context within which Project Coast, and the chemical and biological weapons research programme, developed. The state had little to no part, however, to play in the institutional workings of Project Coast, or in the ideological development of the programme's research projects.

Conclusion:

Discontinuities in the late Apartheid State

At the end of the final chapter of this thesis, I concluded that the relationship between the workings of the chemical and biological weapons research programme and the workings of the late Apartheid state was best described as coincidental. The state helped to determine the broader context within which the programme operated, and also provided the vast majority of the programme's funding; much of the programme's material equipment and many of its original staff were also recruited from within the state. And yet, nonetheless, there is no evidence to suggest that the state played any role in determining either the way in which the weapons research programme was institutionalised or the way in which the particular research projects it embarked upon were chosen and developed. Indeed, as I argued throughout the length of the thesis, the actual development and rhetoric of the programme's institutions and research projects were utterly incompatible with those of the late Apartheid state. Certain similarities between the state's practices of governance, and the practices of Project Coast's research programme, such as their shared "common sense" racial ideas and their shared commitment to rationalised violence, may have at first disguised the discrepancies between the two. But, upon closer study, these discrepancies are hard to ignore. It is

worth using the largest part of this concluding section, then, to recapitulate the argument that has led me to this final conclusion to the original question that animated the writing of this thesis. I can identify five conclusions that lead to this point.

The first of the conclusions reached in the course of this examination of the state's chemical and biological weapons research programme -- that is to say, the weapons research programme approved and funded by the late Apartheid state through the institutional structures of the South African Defence Force -- is to affirm that the research programme had its own, unique institutional history. This is in contrast to the assumption that has determined the way in which the two principal works that examine the weapons research programme have addressed the institutional frame within which that research was conducted.¹ These works both assume that the programme's institutional frame remained unchanged from its beginning to its end and that, therefore, the development of the research programme can be studied as if its institutional frame did not exist -- or, rather, that the frame can be typified in the opening section of the work and then taken for granted throughout the remainder of that work. Because the greater quantity of the evidence currently made public describes the last years of Project Coast, the military's code name for the chemical and biological weapons research programme's institutional framework, these works impose the end of the programme's operation on its beginnings. The first substantial portion of this thesis was devoted to successfully demonstrating that the original institutional framework described by the scientists and administrators

¹ Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Programme* (USAF Counterproliferation Centre, Maxwell Air Force Base, VA: 2001) and Marlene Burger and Chandré Gould, *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme* (Zebra Press, Cape Town: 2002)

involved in its creation was not identical to the framework described by those involved in its dissolution. On the basis of this demonstration, I argued that any examination of the development of the weapons research programme must take into account the simultaneous development of its institutional frame: namely, Project Coast.

The development of Project Coast in the decade from its origins to its end was marked by a series of discontinuities, redundancies, and ruptures that marked it as something other than a traditional bureaucratic structure. Two examples will serve to illustrate this series here: one, that there seemed to be no way to determine the expertise of the individuals appointed to positions of responsibility within the research programme, and two, that there seemed to be no provision within this institutional frame for the promotion of component individuals. These particular institutional traits seemed, upon a closer examination of the original structure of Project Coast, to be too regular and too consistent to be simply dismissed either as the product of bureaucratic incompetence, or as the product of fraudulent intentions. Its internal consistency suggested that Project Coast did indeed partake of a coherent institutional structure, even if that structure was not the expected bureaucracy. To determine what that structure was, however, the remaining half of the first chapter of this thesis was given over to an examination of the determining traits of an ideal modern bureaucracy, as presented in the theoretical writings of Max Weber.² This led to an examination Weber's further theoretical writings, in which I recognised a description that matched the structure of Project Coast, as it was

² Max Weber, *From Max Weber: Essays in Sociology*, translated by A.M. Henderson and Talcott Parsons, and edited by Talcott Parsons. (Oxford University Press, Oxford: 1947)

presented as being at the time of its origin.³ The description offered by Weber was of an institution founded on the legitimating authority of charisma, embodied in one particular individual. That charismatic leader's followers were not, Weber explained, appointed for their expertise but rather for their faith; and there was no need for a system of promotion in a charismatic institution as advancement through the institutional structures was solely determined by the personal relationship between an individual and the programme's charismatic leader. It seemed plausible, therefore, to tentatively identify Project Coast as being of the type of institution formed by charisma.

The charismatic authority from which the institutional structure of Project Coast took its legitimacy, and thus the legitimacy of the framework within which the chemical and biological weapons research programme operated, was embodied in Dr Wouter Basson. Basson represented the Defence Force to the scientists and administrators of Project Coast, and vice versa, but did not derive his authority from his position as broker. It came instead from the recognition of his unique charismatic vision granted him by the men and women who came to be the scientists and administrators of the weapons research programme. This recognition, according to Weber's analysis, cannot be sought without being compromised: it must be given freely by the men and women who chose to become a charismatic leader's followers. Because that recognition of duty, and abdication of responsibility, that defines a charismatic authority is given freely the followers of a charismatic leader must be accounted fully complicit in any decisions taken within a charismatic institutional framework, such as Project Coast. Because the

³ Max Weber, *On Charisma and Institution Building*, edited by S.N. Eisenstadt (Chicago University Press, Chicago: 1968)

visionary at the heart of a charismatic institution is only deemed a visionary because of his reception, a charismatic leader's perceived vision is as much a creation of his followers as it is a reflection of any individual's subjectivity. The accounts of Wouter Basson's influence, then, reveals more about the complicitous nature of Project Coast's organisation than it does about Basson's genuine, true, motives. Although the decisions through which the chemical and biological weapons research programme developed its particular form and focus were the products of several individuals acting separately and in concert, their right to make these decisions was always legitimated by reference to the special authority held by Wouter Basson. Because of this, then, and for the other reasons listed above, the second conclusion derived from my examination of Project Coast is this: the chemical and biological weapons research programme was best described as an institution founded on a man's personal charisma.

The third chapter of this thesis picked up on the implications of this decision-making process, and attempted to interpret the various explanations offered by the programme's working scientists and administrators for the particular form of weapons research that they had developed. Wouter Basson featured in all of these accounts, giving legitimacy to the ideological claims of one scientist after another. His presence in these accounts, as the description of Project Coast as a charismatic institution allows us to determine, signalled the production of a charismatic vision on the part of his followers. It does not necessarily signal his personal acquiescence to any arguments made in his name. Although these accounts were widely divergent in their details, they did all share a set of assumptions beyond the simple legitimating presence of Basson. This set of assumptions

drew inspiration from a hegemonic, “common sense” form of racism rife in South Africa for decades before the chemical and biological weapons research programme’s origin.⁴ The two core assumptions at the heart of this common sense racism were that, first, race existed as a meaningful category, and second, that the differences between races were essential, genetic, and unshakable. This presumed radical difference between races therefore allowed the programme’s scientists to consider the production of chemical and biological agents restricted in their effects to only one race group, namely black South Africans. This common sense racism was given legitimacy by the accounts that linked it to the charismatic leader, Wouter Basson.

The research agendas that arose out of this nexus of hegemonic racism and Project Coast’s self-legitimizing institutional structure were aimed at producing technologies of control. The chemical weapons branch of the research programme produced an advanced form of tear gas, and attempted to produce a pacifying gas out of the active chemicals in street-drugs. This proposed gas would work, in the same way as the street-drugs on which it was based, and thus altering the brain chemistry of individuals in a crowd. The biological weapons branch of the research programme attempted to produce, first, a product that would work as a vector for infection in black South Africans only and, second, a new form of contraceptive that could be administered on a mass-scale, with or without the consent of its subjects. Both of these proposed sets of technologies promised the ability to control the subjects of the late Apartheid state more completely than ever before. But, as I demonstrated in the same chapter, this was

⁴ Deborah Posel, “Race and Common Sense: Racial Classifications in Twentieth Century South Africa,” *African Studies Review*. (Vol 44, No 2: September 2001)

not the ambition of the late Apartheid state. The third conclusion that I then derived from this examination was this recognition of the nature of the goal behind the programme's research, as well as that goal's incompatibility with the state's ambition.

The ambition that stimulated the weapons research programme's development did not, however, remain a constant presence throughout the programme's brief history. Instead, that animating ambition changed with the changes in the institutional framework in which its research programme was structured. In the fourth chapter of this thesis I identify the period between 1985 and 1986, almost exactly midway through the ten years of Project Coast's operation, as the period in which this transformation began to take place. The five years after this watershed period saw the changes made in this period filter through to alter the institutional structure of Project Coast as a whole, and thus to also alter the workings of the chemical and biological weapons research programme. This transformation, I argued, was triggered by the increasing withdrawal of the legitimating charismatic authority of Wouter Basson, a withdrawal that left the institutional structure of Project Coast, and thus its network of visionary decision-makers, without a central point of focus. After some years of floundering, the administrators of Project Coast seemed to find their purpose again, this time in the accumulation of material wealth. The ideological ambitions that had driven the earlier work conducted by the scientists at the weapons research programme fell by the wayside, and was never recovered. The most plausible explanation for this collapse, as detailed in that chapter, was that the animating force of that ambition was Wouter Basson, and it was thus derived from his presence rather than from the programme's location within the state. This was

the fourth conclusion, then, that the examination of the historical development of Project Coast has revealed: that the research programme derived its force from its location in a charismatic institution, and was therefore susceptible to the changes that occurred at the administrative level of that institution. This was how the programme can to appear, in the studies of its ending, simply as a force for fraudulent financial dealings.

With this final chapter, my account of the historical development of the workings of the chemical and biological weapons research programme came to the same point at which the other published accounts of that programme have begun. The simple fact that such a development can be traced across the short period that this thesis studies demonstrates that Project Coast must be taken more seriously as an object of historical change than any of these works allow. That development also, when read against an admittedly simplistic interpretation of Weber's historical sociology, allows the programme's relationship with the larger institutional order of the late Apartheid state to be studied. That relationship was the original animating force that drove this thesis. It is thus fitting that the final conclusion that I propose here should address that relationship:

Project Coast, the institutional framework within which the state-sponsored chemical and biological weapons research programme operated, was an aberration within the institutional order of the state. A charismatic institution within a broader militarising bureaucratic order, it did not partake of any part the state's system of expertise, hiring, promotion, accountability, or order. And neither, therefore, did the chemical and biological weapons research programme that developed through that institutional

structure, as demonstrated in the body of the thesis, partake of the state's ideological order. Although its animating vision was founded on the same hegemonic notions of race as that of the late Apartheid state, its intents and purposes were not the same as the state's. The chemical and weapons research programme aimed to produce a set of technologies that would make the late Apartheid state's strategies unnecessary. It was not, therefore, a part of those strategies, despite its rhetoric.

The significance of this final conclusion lies in the fact that it can recognise the discontinuities, redundancies, and plain oversights within the broad institutional frame of the late Apartheid state itself. If it was possible for a well-funded, executive-approved institution like that of the chemical and biological weapons research programme not only to operate at a remove from the mainstream of the state's institutional order but also to operate at a remove from the self-avowedly "total" ideological rhetoric of the state, then it seems likely that several other institutions -- perhaps less ambitious, and less conspicuous -- also operated within the context of the late Apartheid state without partaking of its particular forms of institution and rhetoric. This possibility has not gone unrecognised in other periods of South African history: the work of Deborah Posel, in particular, makes much use of the discontinuities, incompetence, and contradictions in the early Apartheid state. Her work has done much to strip the Apartheid state of its self-described sheen of totality, and rigorous efficiency.⁵ For the period under study in this thesis, the decade of the 1980s and of the late Apartheid state, however, the illusory efficiency of the state remains a staple of both popular and academic histories. Although

⁵ Deborah Posel, *The making of apartheid, 1948-1961: conflict and compromise*. (Clarendon Press, Oxford: 1991)

that state has been described as being in “crisis” through the period, the literature focuses largely on the efficacy of the state in suppressing the various insurgencies of the period through the mechanisms of the several States of Emergency, the South African Defence Force, and the South African Police. This thesis’s claim to having any significance for the broader history of South African beyond the provision of a more detailed examination of the operation of the chemical and biological weapons research programme, and its institutional frame, Project Coast, lies therefore in this recognition that the late Apartheid state, like its earlier manifestations, was not a total institution.

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