Neurotechnology: the need for neuroethics

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1. Introduction

Neurotechnology might not be as well-known as nanotechnology, but if Zack Lynch, executive director of the Neurosociety Institute is right, then it will certainly start gaining more and more attention, and could potentially become the next wave of techno-economic change (Lynch, 2004). In this paper I will argue that ethical discussion of neurotechnology is crucial as it deals with the organ that has been considered the core of ourselves, namely the brain. In the past a great deal of ethical reflection was dedicated to neurocognitive enhancers such as pharmaceuticals, or more recently to brain imaging techniques. However, these are only two of the different fields covered by neurotechnology. In this paper my aim is to expand the common understanding of neurotechnology and bring up different ethical issues that neurotechnology brings or could bring to the fore, arguing for the importance of ethicists working on these issues.

2. Defining Neurotechnology

During the latter part of the 20th century, the study of the brain moved from a minor position within the psychological and the biological sciences to become an interdisciplinary field that includes fields such as biology, medicine, psychology, chemistry, physics and mathematics. This interdisciplinary field has matured and made rapid progress thanks to advances in different emerging technologies, such as nanotechnology. Such rapid progress will likely continue enabling further investigation and clarification of functions and mechanisms of the brain (Lynch, 2005; Rococo and Bainbridge, 2005; Teixido and Giralt, 2008; Highfield, 2008). Thus, it is plausible to say that as a result of current knowledge and techniques reached through other enabling technologies in modern neuroscience, neurotechnology emerged (Banks, 2003).

Definitions of neurotechnology vary, and no standard definition for it yet exists. In this paper, I will be using the term neurotechnology to refer to the science and technology, as well as the processes and devices, that enable us to understand, analyse, measure, monitor, treat and heal the nervous system and brain. The next section analyses the key features that make neurotechnology unique among other technologies in its potential to transform the human condition. This will allow us to understand why the ethical issues become crucial with neurotechnology.

3. State of Play in Neurotechnology

Neurotechnology is the most rapidly advancing area of medicine and biotechnology (Glannon, 2006; Science and Technology Options Assessment, 2009). Neurotechnology can be categorized into three main fields: (1) neuropharmacology or neurochemicals, (2) neurodiagnostics (which includes neuroimaging, in vitro diagnostics and neuroinformatics), and (3) neurodevices (which includes neuromodulation, neuropsychiatric, neurofeedback and neurosurgical devices). Neuropharmacology and neuroimaging are the two fields that have received a large amount of attention in the literature, both the technical issues and the ethical ones. However, other fields, such as neurodevices, have not received much attention (Warwick and Cerqui, 2006). It is
important that neuroethics understand the broad spectrum of neurotechnology, as currently other technologies, such as nanotechnology, are helping the development of neurodevices that will reach areas of the brain not previously reached before. As such, no development in neurotechnology should be neglected, as the main feature of neurotechnology is its unique capabilities.

One of the reasons why it is plausible to argue that neurotechnology has indeed unique capabilities, is that it can help us to understand and after the brain in detail and depth that previous technologies have not enabled us to achieve before. It can also help us to understand how the brain develops, changes and wire itself, which in turn can help us to better understand human behaviour and cognition. For instance, recently an international cooperation project showed that it is possible to track nerve cell communication using fluorescent proteins that light up during individual action potentials, that is to say when neurons communicate between them (Max Planck Society Press Release, 2008). This is important, because it can be used to understand better thought processes in the human brain. Also researchers from Cambridge University have discovered that whether someone is a warm or sentimental person may depend on the structure of the brain (University of Cambridge News, 2009).

Neurotechnology could also help in the development of new or improved treatments aimed at curing the more than 1,000 devastating brain-related illnesses, injuries, or disorders, ranging from brain damage to neurodegenerative diseases (Society for Neuroscience, 2008; Kandel and Squire, 2000). If we acknowledge that these conditions result in more hospitalization than any other disease group, including cancer and heart disease, and that they account for almost 11 per cent of the disease burden globally, then it is plausible to say that neurotechnology has indeed unique potential in helping us to tackle many health related issues. The expectation is that neurotechnology will benefit from knowledge provided by past studies and other enabling technologies, and that it can then, hopefully, help improve current treatment (e.g. pharmacogenetics) or help to come up with different and new ways to tackle these brain and nervous disorders, injuries and illnesses. Thus, neurotechnology with its promise to foster health fits in with the goals of the main ethical theories. Whether it is the achievement of the good life, maximization of a certain good (in this case health or happiness, as the latter can be considered to be connected to a healthy state), or respect of human rights (the Universal Declaration of Human Rights recognizes the right to health and well-being), a healthy state is seen as valuable. As Norman Daniels has put it in his book *Just Health: Meeting Health Needs Fairly*, 'health is of special moral importance because it contributes to the range of exercisable or effective opportunities open to us' (2008, p. 3). Therefore, even if neurotechnology might exacerbate or bring new ethical challenges it also has the potential to help attain and add value to our lives.

A few examples of neurotechnology in the health sector are the following. Researchers at Boston University are developing brain-reading computer software for a prosthesis that essentially aims at translating thoughts into speech, which could be used for locked-in syndrome patients (Chu, 2008) or people who have lost their speech capacity. The finding of specific neurons involved in the formation of memories (Scipios Research Institute, 2007) has helped to develop strategies that weakened fear response connected to memories (Netherlands Organization for Scientific Research, 2009). More recently, the finding of a molecule known to preserve memories (i.e. PKM eta) could be used in the creation of therapies based on this molecule’s enzyme for treating depression, general anxiety, addictions, post traumatic stress and phobias (Serrano et al., 2008). Finally, we can mention that research is being undertaken in improving brain-computer interfaces (BCI), which currently exist mostly as non-invasive devices (Waters, 2008), but the idea is to achieve BCIs implanted and fully integrated with the brain. This last example is a clear case of neurotechnology being used not only for medical purposes but also for military purposes, and entertainment purposes (e.g. video games).

Other reasons for considering neurotechnology important are the amount of investment and research (Neurotechnology Industry Report, 2008), and the incredible number of articles and reports on neurotechnology. Moreover, neurotechnology does not seem to have the same features to become the next technological revolution, not because it will change directly our world and environment, as in the case of previous technologies, but because it will change from the core. Consequently, we are in the need for neuroethics that understand and analyse the ethical issues that neurotechnology brings to the fore.

4. Defining Neuroethics

At some point in the history of clinical neurology, bioethical issues were regarded as 'neurotics' (Wolpe, 2004), probably when some ethicists concerned with a more specific subject, namely the brain and nervous system, decided to differentiate themselves from the wide spectrum of bioethics (Rose, 2007).

Here, it is worth clarifying that neuroethics does not refer directly to the ethical issues that come from manipulating our minds, as some people like ethicist Neil Levy seem to be arguing. Considering that there are many different views on what the mind is (e.g. separate from the brain, enabled by the brain, an emergent property of the brain), to base our ethical considerations on it could shift our focus from the real ethical issues. Therefore, when talking about neuroethics we should be cautious in trying to be clear that the object of concern is the brain and not the mind. That is not to say that the mind will not be affected by altering the brain, but rather, that our focus should be the brain and not the mind.

Neuroethics can be understood as the ethics of neurotechnology or as the neuro understanding of ethics (Rokoski, 2005). The former seeks to develop an ethical framework for regulating the conduct of neurotechnology insights and their applications to human beings; while the latter refers to the impact of neurotechnology knowledge upon our understanding of ethics itself. Neuroethics, as an ethical field of inquiry, groups many and sometimes diverse ethical issues, William Safire, a political journalist and Chairman of the Charles A. Dana Foundation, sees neuroethics as a subdiscipline of bioethics, defining neuroethics as:

The example of what is right and wrong and good and bad about the treatment of, perfection of, or unwelcome invasion of and worrysome manipulation of the human brain ... it deals with our consciousness – our sense of self – and as such is central to our being. [It involves] ... the misuse or abuse of power to change people’s lives in the most personal and powerful way, or the failure to make the most of it (Safire, 2002).

The above definition, according to Michael Gazzaniga, Director for the SAGE Centre for the Study of the Mind at the University of California Santa Barbara, is a little bit narrow. He considers that neuroethics also includes ‘the social issues of disease, normality, mortality, lifestyle, and the philosophy of living, informed by our understanding of underlying brain mechanisms ... it is – or should be – an effort to come up with a brain-based philosophy of life’ (Gazzaniga, 2005).
From the previous two definitions, it can be seen that even though there is not an established definition on the issues that neoethics should be focused on, there is agreement on the importance that our brain plays in our lives and for our beings, thus a separate field of ethical inquiry.

5. Need for neoethics

Neurotechnology, as with any other scientific, technical and intellectual endeavour, seems to produce not only new knowledge, but also new mysteries and challenges. The aforementioned characteristics of neurotechnology increase its potential benefits, but also its risks and dangers, producing new or exacerbating previous economic, political, social, cultural, and, the ones that are the subject of this paper, ethical challenges (Rose, 2007; Lynch, 2004; Levy, 2007; Greedy, 2006; Farah and Wolfe, 2004).

The brain is the focus of neurotechnology, and the reason why the ethical issues concerning neurotechnology take a different depth. But why is the brain of such importance? To start, the brain is the single organ that controls all our bodily activities, ranging from memory and learning to heart beat; that allows us to think, reason and feel; and that carries out affective and cognitive capacities of reasoning and decision-making. If we add to these that the brain is much more sensitive and dynamic to intervention than any other part of our anatomy and physiology, and that it is the organ most associated with our identity (National Research Council, 2008), then it seems reasonable to think that this technology does bring different challenges compared to previous technologies. For instance, many of the ethical issues within nanoethics are issues that need to be evaluated in the context of nanotechnology, without the moral issues themselves being unique to it (e.g. safety issues).

In the case of neurotechnology, even though some ethical issues are similar to those raised by other converging technologies, such as nanotechnology or genetic engineering, and have been the subject of nanoethics or bioethics in general, they are different in degree. Take identity as an example. In the past a large amount of bioethical discussion has been concerned with identity. However, the analysed issues were not the result of altering the organ in which many people believe identity rests in the first place, namely the brain. Thus, I believe it is plausible to argue that the issues, even if they remain the same, do take a different degree of ethical analysis.

Furthermore, there are some ethical issues that we can hardly deny do offer something new that has not been instantiated in a different field of applied ethics (Lin, 2007). These challenges can be seen as being different in kind. The reason why this is so, is mainly because in the past all the changes produced by our technology were processed in a brain that in general terms remained unchanged. So for example, amputees using a prosthetic use their brain to process and learn how to use the prosthetic. In contrast, the new challenges that neurotechnology faces us with come from the fact that we are directly, intentionally and specifically altering the brain. Whether we do it by using pharmaceuticals, neuroimplants or BCIs, the fact is that we are changing the organ that, in principle, processes and analyses by itself all the inputs we receive from outside (either from the environment or from any other parts of our body that are not the brain). Consequently, the direct alteration of the brain does not only bring along uncertain consequences, but most probably it will mean that the way we use our brain to perceive the world will change. This could bring a communication divide, a divide caused by the fact that some people will no longer be able to share the same basic experiences in order to communicate with each other. Such a divide is of crucial importance considering, as Habermas rightly said, we encounter a transcending power through communication when we reach an understanding with one another about ourselves and the world (2003). It is also possible that new understandings of how the brain works could change our understanding of autonomy, free will and morality itself, bringing also ethical challenges that are new in kind.

To summarize, considering the different issues, either in degree or in kind, that neurotechnology brings to the fore, it seems reasonable to agree with Walter Glannon’s, who said that “it is because intervening in the brain can affect us so directly and deeply that we should be debating the ethical issues generated by different practices in neurotechnology” (Glannon, 2006, p. 12). Thankfully, there are currently some government initiatives, groups of people and academics trying to deal with the ethical issues brought up by neurotechnology. There are some programmes, projects and student courses focusing on neuroethics around the globe, and also journals, such as the journal Neuroethics. However, considering the potential impacts and risks that neurotechnology may have on us, more still needs to be done. Neuroethicists need to transcend the bookshelf and the academic environment and get to the people, informing them of the benefits and the dangers and the different arguments that support and oppose neurotechnology. This is needed if we, as society and individuals, want to make informed decisions on how to face the challenges that come from intervention and manipulation of our brains.

Now that we have a better idea of why neurotechnology takes a different ethical analysis in comparison with other technologies, I want to present some of the crucial issues that neuroethics is challenging us with. For the sake of making the exposition a little bit clearer, I will mention four main categories of ethical concern, which in many cases overlap but are considered under the suggested tag as they seem to have more weight under that tag.

1) Regulation

Some people might consider that regulation issues are covered by other fields, such as law. However, if we bear in mind that our legal and moral conceptions of responsibility are likely to be challenged as our understanding of the brain’s mechanisms of behaviour evolves (Farah and Wolfe, 2004; Freeman et al., 2000), then it is plausible to say that neuroethicists need to tackle these issues. An interesting example here is using neuroimaging for deciding whether someone is lying or not, and using this as evidence in a court; as Gazzaniga puts it, “neuroethicists are beginning to wonder whether brain imaging has the potential to become the ultimate lie detector” (2005, p. 107). Another example is using brain fingerprinting (such as the computerized knowledge assessment (CKA) that measures changes in the P300, an EEG brain wave response) to identify terrorists in airports, as has been argued by Steven Kirsch, a political advocate and multimillionaire Silicon Valley philanthropist. The idea here is to expose subjects (e.g. foreign nationals wanting to enter the US) to a selection of words and images, then measure the changes in their brain waves, and determine whether or not the person has knowledge of information that only terrorists (and a small group of FBI specialists) will be familiar with. In contrast with previous lie detector tests, brain responses cannot be faked.11 Here neuroethicists have to balance a technology that is less intrusive and that, according to its supporters, does not discriminate on the grounds of race, age, sex, or the language, with a technology that, as Wyre Sentimenti argues, brings the Orwellian concept of ‘thought criminals’ into reality, eroding our autonomy and privacy (Sentimenti, 2001). The challenge for regulation is to decide between our social rights of keeping
public order in contrast with our individual right to privacy, especially when we are not talking of invasion of our phone calls, emails, or shopping patterns, but invasion of our own thoughts. Moreover, if brain scanning becomes a reality, how is regulation going to ensure that our brain information remains secure and that no company or government will use that information for profits or coercion purposes?

One more area of ethical concern regarding regulation issues is consent. For example, if someone is under the influence of an emotucal (a drug that augments emotions), how can we ensure that such a person has given genuine consent. On similar grounds, a recent article by Julian Savulescu and Anders Sandberg, argues that biological manipulations of attraction, lust and attachments (i.e. neuroenhancement of love) offer an important addition to psychosocial interventions. However, it seems strange to say that someone is truly in love or in a genuine relationship, when that someone feels attachment for another person, only as the result of having been given (presumably without knowledge) a drug to feel attachment.12

These are some examples of the issues that neuroethicists, together with policy makers and regulators will be faced with.

2) Safety

Safety issues include toxicity, biocompatibility and health issues. Even though safety has for a long time been of concern in bioethics, the urgency to tackle safety issues when the brain is the subject of intervention takes on a more critical tone. Take for instance the case that in the future we can have active neuropsychiatrist that help the brain to make new neural connections (e.g. to improve cognition). Here, even if we have the right materials to attain bioavailability and avoid toxicity concerns, we still have the issue of how safe it is to decide for ourselves which neuron connects to which synapse. Additional issues relate to how safe it is to manipulate our decision-making processes, feelings and mood with pharmacological substances that have greater specificity – particularly, if we take into account that there are an increasing number of people using pharmaceuticals when there is no medical indication (National Research Council, 2008; Farah and Wolpe, 2004).13 Common examples of this are the use of Ritaline (prescribed for Attention Deficit Hyperactivity Disorder (ADHD)) or Modafinil (prescribed for narcolepsy and shift work sleep disorder) for improving concentration, alertness, memory and planning (Sahakian and Morein-Zamir, 2007; Medow, 2009).

The major features of neurotechnology are a great advance for new medical therapies, but they also create more urgent safety issues. It will also probably mean that we will have to make a choice between quick results and avoiding undesired consequences if we truly want to measure the impact on humans, as many safety features will take a considerable time to develop. Another safety concern is related to the meaning of diagnosing, as more sophisticated and precise in vitro diagnostics could allow us to diagnose someone of a certain condition before he or she presents any symptoms. Should we also risk the safety of the patient by giving him or her treatment even when he or she is still healthy? What would it mean to be ill/healthy then, presenting symptoms or just having the potential to develop a certain ill-condition?17

3) Social Justice

Social justice involves issues related to equity, access, distribution and control. Here, some argue that if neurotechnology promotes higher levels of intelligence for certain individuals and as a result of this we can perceive an increase of wealth, then it will exacerbate inequality (Levy, 2007). For instance, say that we use a cognlictical (a pharmacological substance that improves cognition capabilities, like the cases of Ritaline and Modafinil mentioned above) or a brain-implant to augment or improve our cognitive capabilities. Then, if we consider that the current society in which we live is hungry for certain abilities, and not for others, those who have the means to obtain these devices or pharmaceuticals, will have an advantage in comparison with the ones that do not have access to them. Another issue is related to using neurostimulation or neuromodulation methods to activate certain responses in non-consent situations, e.g. to coerce people to do certain activities or to make soldiers forget traumatic things they were made to do (erasing or weakening of memories). Related to social justice, ethicists also have the challenge to develop strategies for equal access and equity, which considering what is at stake is the organ that defines us, become more urgent.

4) Social Change

The final category encompasses social change. I have already mentioned above issues related to privacy and security. I have also mentioned issues connected with how we understand concepts like health and disease (Wolpe, 2004; Farah and Wolpe, 2004).

However, here I would like to point out that there is hardly any doubt that neurotechnology will also force us to rethink and redefine our humanism, and our concepts of mental states, selfhood, autonomy and morality. Moreover, as Eric Racine and Judy Illes have argued, neurotechnology will fundamentally alter the dynamic between personal identity, responsibility, and free will (Illes and Racine, 2005, p. 14) in ways no other technology has done in the past.

Other issues that can be considered under this tag are new behaviours due to neurostimulation (e.g. pharmacological or implant) (Lynch, 2004) and sociocultural risks. However, the issue that seems to take a unique direction, even though it has been the subject of a large amount of discussion in bioethics (Parvaz, 1998; Daniels, 2000; Greely, 2006; Kass, 2003), is enhancement. For instance, some ways of neurostimulation have already been used beyond just improving mood and mental function in patients with neuropsychiatric disorders into enhancing certain features (Snyder et al., 2005). The drug sector is also coming up with several drugs to enhance cognition and mood (Sahakian and Morein-Zamir, 2007; Medow, 2009). Other areas that neurotechnology will promote and that can be considered in the enhancement discourse are brain-machine interfaces and cognitive prostheses (Donoghue, 2002). The reason to believe that enhancement takes a unique turn within neurotechnology is that the direct and intentional manipulation of the brain, which in one way or another defines us and gives meaning to the world surrounding us, has the potential to transform nearly every aspect of us, not just from the surface, but from the core.

The previous overview, hopefully, gives us an idea of which ethical issues neuroethicists will be confronted with. The important point is, regardless of which issues we decide to focus on regarding neuroethics, that ethical analysis takes place. Some ethicists already agree on the fact that some of these issues are indeed unique (Farah and Wolpe, 2004; Illes, 2006; Levy, 2006; Turner and Sahakian, 2008). What is needed then, considering the benefits and risks, is more work to be done in neuroethics; work that catches up with the day-to-day developments of neurotechnology and that gives us insight into the appropriate uses and applications of neurotechnology developments.
6. Conclusion

Neurotechnology is important, firstly, because it deals with the organ and human system in charge of all the processes that make us who we are, that allow us to interact with and know the world, that allow us to give consent and evaluate, value and measure. Secondly, it is important because it has the potential to expand our understanding of the mechanisms of cognition, consciousness, behaviour, emotions, and also to manipulate them by technological means. Thirdly, neurotechnology also has the potential to re-wire our brains, either by chemical or anatomical selectivity. Finally, it also has the potential to expand the boundaries of human performance and cognition, changing the way we understand who we are and our environment. So, even if neurotechnology is still gaining recognition as a new field of inquiry in the public domain, considering its focus, namely the human brain, it is reasonable to say that we urgently need neuroethicists in order to keep up with the new and more urgent ethical challenges that neurotechnology has the potential to bring along.

Our technologies have always changed us in many ways, but this might be the first time that a technology will give us the precision and the level of interaction at the neural level to genuinely say that it will change us fundamentally from the core. These new and more urgent challenges are challenges that neuroethicists need to be aware of and investigate. Only then, will we be able to prevent or at least be ready for the non-desirable outcomes or side-effects that different uses of neurotechnology could bring for the individual and society – in particular, when what is at stake is our own humaness.

Notes
1. Zach Lynch (2004) describes neuroenhancements as neuromodulators that, contrary to current psychoactive pharmaceuticals, have high efficacy and negligible side effects.
2. Zach Lynch actually states that it is 30% of disease burden, as the WHO report does not take into account psychiatric illnesses.
4. The researchers managed to weaken the fear response by administering the beta-blocker propranolol in human volunteers.
5. The Defense Advanced Research Projects Agency (DARPA), for instance, is involved in many projects that aim at improving and creating new brain-machine interfaces.
6. Adina Roskies actually mentions the neuroscience of ethics and the ethics of neuroscience, but as I stated earlier I am using neurotechnology to encompass both neuroscience and neurotechnology.
7. Some have also coined this understanding of neuroethics as ‘naturalized ethics’. For other sources regarding the understandings of neuroethics see Illes, 2006 and Levy, 2007.
8. Here I am making emphasis on the brain, because even if the subject of neurotechnology is the whole nervous system, the final processing and analysis of the inputs received by the nervous system take place in the brain.
9. Walter Glannon is associate professor of philosophy at the University of Calgary.
10. In the US, the University of Pennsylvania and Stanford University offer programmes and graduate courses on neuroethics. Also in the US we can mention the MacArthur Law and Neuroscience Project, the Neuroethics group at the Centre for Cognitive, Liberty and Ethics, the Institute for Ethics and Emerging Technology, the Dana Foundation, the Greenwall Foundation and the American Society for Bioethics and Humanities. In Canada, the University of British Columbia has the ‘National Core for Neuroethics’, which is host of the International Neuroethics Network (INN); the University of Dalhousie has the Neuroethics Net Group; the Neuroethics Research Unit at IRCM (Institut de recherches cliniques de Montréal); the Canadian Bioethics Society and the Canadian Association for Neuroscience. In Europe, the European Neuroscience and Society Network, the Oxford Centre for Neuroethics, the Rathenau Instituut, the Neuroethics Portal at Johannes Gutenberg-University Mainz, the 3TU Centre for Ethics and Technology, the European Dana Alliance for the Brain and the Federation of European Neurosciences. The Neuroethics Society is a more international kind of research group.
11. For more details on this, see www.skisch.com/politics/plane/ultimate.htm
12. Although Savulescu and Sandberg were not that extreme in their examples, this could definitely be a use for this kind of neuroenhancement of love.
13. This practice is also known as off-label use.

References


'Appropriate' police discretion and Indigenous over-representation in the Criminal Justice System

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1. Introduction

In Australia, 'the appropriate use of discretion' is frequently identified as being critical in the policing of Indigenous people, with particular reference to addressing the over-representation of Indigenous people in the criminal justice system and the issues that flow from that (e.g. deaths in custody and limited employment options due to having a criminal record) [1]. For instance, the NSW Police Force Aboriginal Strategic Direction 2007 - 2010 has as its seventh objective: 'Reduce offending and over-representation of Aboriginal people in the criminal justice system' (2007, p. 46). And one of the strategies listed for achieving this objective is 'Encourage the appropriate use of discretionary Police [sic] power' (2007, p. 47). None of the references that I have read to 'appropriate use of police discretion', however, give any practical guidance on what such discretion involves - what is it to use discretion appropriately? In particular, what should police alter about their current use of discretion to ensure that it is being used appropriately?

These questions are not merely of theoretical interest. Answers to them will provide police with guidance as to how they can best carry out their roles in the community, and – if necessary – improve on their current practices. This paper will determine what 'appropriate use of discretion' ought to mean when considered via a teleological consideration of its role in policing; and briefly indicate how the thus-developed account can assist in the critiquing of judgements about police interactions with Indigenous people.

2. Background

That a link exists between the use of police discretion and the over-representation of Aboriginals in the criminal justice system appears to have been first made in Australian academic literature by Elizabeth Eggleston in her seminal work *Fear, Favour or Affection* (1976) [2]. It has been more commonly asserted since the Royal Commission into Aboriginal Deaths in Custody (RCIADIC) found that the main reason so many Aborigines died in custody was that they were over-represented in the criminal justice system.

1.3.1 The work of the Commission has established that Aboriginal people in custody do not die at a greater rate than non-Aboriginal people in custody.

1.3.2 However, what is overwhelmingly different is the rate at which Aboriginal people come into custody, compared with the rate of the general community. ... 

1.3.3 The conclusions are clear. Aboriginal people die in custody at a rate relative to their proportion of the whole population which is totally unacceptable and which would not be tolerated if it occurred in the non-Aboriginal community. But this occurs not because Aboriginal people in custody are more likely to die than others in custody but because the