



Playing Musement Games: Retroduction¹ in social research, with particular reference to indigenous knowledge in environmental and health education

Leigh Price
Rhodes University, South Africa

Moreover, those problems that at first blush appear utterly insoluble receive, in that very circumstance... their smoothly-fitting keys. This particularly adapts them to the Play of Musement. Peirce (1901, Internet paper)

Enter your skiff of Musement, push off into the lake of thought, and leave the breath of heaven to swell your sail. With your eyes open, awake to what is about or within you, and open conversation with yourself; for such is all meditation. Peirce (1901, Internet paper)

Abstract

My aim here is to introduce the concept of musement (retroduction or abduction) as an appropriate alternative to deduction and induction, both in indigenous knowledge (IK) specifically and in social science generally. As an example, I will use musement to tentatively address some of the ethical problems of using indigenous knowledge (IK) in environmental education and health education.² This paper will therefore be of use both to researchers/educators wanting a discussion of retroduction, and researchers/educators wanting a discussion of indigenous knowledge epistemology and its relationship with ethics. I am arguing, from a perspective that allows a stratified reality (things can be real even if not measurable or actually present), that, we admit retroduction into our list of allowable research logics. In terms of IK, the result of accepting retroduction as a valid logic is that we allow IK to be dynamic and non-reified. It also allows a previously ignored aspect of IK, its spiritual/non-empirical beliefs, to be validated through ethical outcomes experienced in our lives, rather than through the previous criteria of empirical validity. In other words, we ask for IK: does believing in (whatever) adequately explain experience and/or provide optimistic, long term, ethical, appropriate ways of living? Thus, retroduction has the potential to allow IK to contribute to a normative ethics.

Introduction

In this paper, I explore a concept currently being brought to our attention mainly by critical realism (CR) known as 'retroduction'³ or 'abduction'.⁴ Peirce (1901) additionally used the terms 'guessing', 'musement' and 'pure play' to denote abductive or retroductive reasoning.⁵

I argue that in social science, musement⁶ should be an accepted logic, along with deduction and induction.⁷ This is because musement allows the researcher to engage with non-empirical social structures and mechanisms. I then explore the potential of musement to address certain seemingly unsolvable ethical problems in the use of IK in environmental education.

A Stratified View of Reality and the Importance of Musement in Social Science

The critical realist Roy Bhaskar insists that reality is stratified. By this, he means that what is real is not just what can be measured, as is claimed by empiricism. Rather, what can be measured is only a subset of a larger reality which includes what is actual but not empirical (events which have happened, but cannot be 'measured' or reproduced) and what is real, but neither actual nor empirical (for example, an unexpressed tendency in society or intangible, but knowable, structures and mechanisms in society) (Bhaskar, 1989:190; Sayer, 1999:11). This view of reality rests on the assumption that absences are real. For example, a purely positive view of reality would assume that because slaves do not express their power, they do not have power. For critical realism, unexpressed power is nevertheless real power.

Bhaskar suggests that perhaps the most important mistake made by Western philosophy is the insistence on ontological monovalence, i.e., that what is real is only what is positive (Bhaskar, 1993:406). In the social sciences, ontological monovalence is a problem because so much of what we are interested in falls into the non-positive and thus unmeasurable real and actual categories. Ontological monovalence is sometimes called positivism. In opposition to ontological monovalence, critical realists have shown ontology to be bivalent, and indeed polyvalent (Bhaskar, 1993:401).

This is why musement becomes useful for social research: its measure of validity is not whether what we are researching can be measured and the results replicated (ontological monovalence), but whether our explanation does a good job of accounting for the evidence and whether it provides us with appropriate ways to act (Sayer, 1999:21). Musement takes empirical experience and uses it as evidence for explanatory theories of structures and mechanisms. Those structures and mechanisms are real but not themselves empirical.

There is a kind of non-vulgar pragmatics at work in musement, because the best explanation is that which 'works for us',⁸ that is, we take the evidence available to us and retrospectively suggest non-empirical, antecedent structures and mechanisms to explain that evidence. Like a crossword (Haack, 1998:85–86), the evidence available to us should interlink and extensively corroborate the explanation. Indeed, Peirce both coined the word *pragmatism* and introduced the word *retroduction* to Western philosophy (Brent 1993:3).

Now to Demonstrate the Potential of Musement: Some pure play with the problems of indigenous knowledge

What follows is a brief identification of some IK problems,⁹ and possible causes of those problems, derived through musement. I have relegated references to the footnotes to allow the ideas to flow more easily.

- *There is a tendency for education practitioners to tactically use IK only where it fits in with positivistic knowledge constructions.¹⁰ Thus, non-empirical issues such as spirituality are often excluded from discussions which otherwise include IK.*

This invisibility with regards IK spirituality and non-empirically testable claims is perhaps¹¹ because, despite rhetoric to the contrary, practitioners do not hold IK valid unless it matches their, usually positivistic, knowledge.

- *It is often politically difficult to disagree with IK interpretations,¹² even if there are good reasons for such disagreement. For example, in a medical situation, perhaps the argument 'it is against our culture' is life threatening when it is used to deny women the right to insist that their partners wear a condom where appropriate.¹³*

This silencing of debate is perhaps because the phenomenological approach to IK tends to reify it; if people say something is true, then it is true for them, and thus, politically, it is difficult to disagree with it.¹⁴

- *There seems to be a 'glass ceiling' limit to the potential of IK to be included in discussions of normative ethics to guide health-wise and environmentally-sound practice in current mainstream (that is, Western-style, rather than indigenous) circles.¹⁵*

Apart from the discrimination IK receives because it is considered less valuable than scientific knowledge, this 'glass ceiling' is perhaps also because the petrification of IK as phenomenological 'treasure' makes it relevant only to its specific context, thus limiting its potential to contribute to normative ethics for the broader community.

- *Indigenous people have demonstrated that their IK is used manipulatively and condescendingly.¹⁶*

That IK is treated condescendingly and manipulatively is perhaps a result of the narrow sphere of influence afforded IK and the lack of Western practitioner conviction, despite rhetoric to the contrary, with regard the spiritual and non-empirical beliefs present in IK.

Some Background Assumptions

Indigenous knowledge has much to offer environmental and health educators. According to Masuku Van Damme and Neluvhalani (2004:368), IK has much to offer. Apart from practical knowledge about managing the environment and health, IK also insists on values such as 'respect' and 'responsibility' for the environment. Much of this respect is imbedded in indigenous peoples' knowledge about spirit/God, as well as in their non-empirically-grounded cultural norms (for example, Haverkort & Hiemstra, 1996; Hill, 2003).

IK ethics is currently immobilised. The potentially useful ethical implications of IK are immobilised between two issues. Firstly, researchers are afraid that if they were to treat IK with the same respect they treat 'scientific knowledge', they would have to either believe absolutely in the spiritual/non-empirical aspects of IK, or they would have to suspend their belief in reality. Secondly, there is the fear that, if researchers were to apply the same criteria of (empirical) validity to IK as they do to scientific knowledge, its spiritual/non-empirical aspects would not hold up. This is a problem for indigenous peoples, since currently there is a truce; they are 'allowed' the spiritual/non-empirical aspects of their knowledge so long as these remain unthreatening phenomenological artefacts.

There is a link between spirituality/non-empirically-based beliefs (or 'long-term optimism' or even 'good manners'), ethics and retrodution. Interestingly, and appropriately for this paper, Peirce's most explicit exploration of retrodution was not, as one might expect, within the context of scientific issues, but in the context of demonstrating the existence of God through the measure of ethical behaviour. However, Peirce's God was perhaps not a typical one.

Though God is a value-laden term for most people – the idea of God’s Reality, in Peirce’s sense, does not have to signify a specific being – nor need it have a religion connected up to it. It appears that Peirce’s use of the term, God, may have signified an ongoing inquiry into the hypothesis that there is meaning resulting from the way in which an individual conducts his life. This meaning is a consequence of deliberate choices of conduct based upon having abductively developed the hypothesis that what he does matters to both the immediate and ultimate outcome of things that may be beyond his ken. (Chiasson, 1999: paragraph 26)

Chiasson goes on to say that Peirce was really arguing for the Reality of the ways in which one’s perspective or vision directs the aesthetic (the ethical and the reasonable as practiced) to the living of a good life.¹⁷ She suggests that perhaps there is simply a language-based confusion between what one person might call a hopeful vision that must be connected to a belief in God, but which another might be willing to agree is a form of long-term optimism. She writes:

The optimistic application of abductive reasoning allows an individual to engage in an aesthetic exploration of options and to then filter these options through the lens of ethics (or right conduct) before establishing one or another hypothesis as worthy of development and testing out in the inquiry that is one’s life. Peirce called this ‘right reasoning’. John Dewey called this activity undergoing an ‘aesthetic experience’. (Chiasson, 1999: paragraph 25)

For Chiasson, Peirce was not claiming that the proof of the reality of God resided in an after life, or in empirical measurement, but in the effects that this belief has on the way in which we conduct ourselves in this life. That is, in terms of our ethical conduct. She redefines Peirce’s use of the word ‘God’ into:

...any hypothesis – formed by means of optimistically undergone abductive reasoning – that leads one into consciously choosing ethical conduct that results in the living of a good life – whether or not the concepts we know as God or an afterlife enter into the matter at all. (Chiasson, 1999: paragraph 31)

Peirce’s pragmatism teaches us that what is important is what transpires (critical realists would say what ‘emerges’) through the process of believing, which is also a process of relating to ‘others’, human and non-human. People mainly develop their ethics out of their non-empirically-based beliefs (which include values), and for 86% of the world’s population these non-empirically-based beliefs are religious (MacQueen, 2004:6). Since retrodution is the proper logic for dealing with non-empirical issues, there is a strong argument for the assumption that there is a link between non-empirically-based beliefs, ethics and retrodution.

Given These Assumptions, How Can Retroduction Help with Our IK Problems?

Let us revisit our IK problems outlined above:

- *There is a tendency for education practitioners to tactically use IK only where it fits in with positivistic knowledge constructions. Thus, non-empirical issues such as spirituality are often excluded from discussions which otherwise include IK.*

Taking the non-empirically-based logic of musement seriously would allow researchers to consider knowledge that conventionally does not fit the usual norms of validity. Validity would be how well the proposed ethical conduct resulting from the beliefs would fit with, or be corroborated by, our experience of our lives. It would be that which ‘works for us’.¹⁸ Peirce emphasised the place of action–reaction–interpretation as the ongoing process for setting out to (fallibly) prove the hypothesis of God – the same way as he would have us set out to prove anything else. The only difference for Peirce between retroduction for scientific issues and retroduction for the existence of God (or indigenous spirituality for that matter) was that the latter required the individual to consciously engage in the experience of living his life. In other words, we submit our vision of God or spirit (or long-term optimism if you prefer, or even just ‘good manners’) to a process of triangulation and corroboration with the experiences of living our life. Chiasson writes:

The proof – if it can be called that – resides in testing and adjusting as necessary to the conditions of the hypothesis throughout the conduct of one’s life and not in any other objective measure. Chiasson (1999: paragraph 29)

- *It is often difficult, politically, to disagree with IK interpretations, even if there are good reasons for such disagreement. For example, in a medical situation, the statement ‘it is against our culture’ is hard to argue with, but nevertheless life threatening, when it is used to deny women the right to insist that their partners wear a condom where appropriate.*

Following IK and accepting its beliefs does not necessarily result in conduct that produces good outcomes. The measure of the truth of interpretations of IK is the way in which these beliefs produce outcomes. The spiritually-based claim that allowing women to take power over their sexuality would anger the ancestors and is ‘not our culture’ cannot easily be justified in terms of the unfortunate outcome (possible loss of life from AIDS infection) of the behaviours attached to that claim. However, since there will always be disagreement as to what constitutes a good outcome, this is not a simple, absolutist solution; it merely opens the doors for debate. Nevertheless, this is an improvement over current phenomenological perspectives that simply leave no room for discussion.

- *There seems to be a ‘glass ceiling’ limit to the potential of IK to be included in discussions of normative ethics to guide health-wise and environmentally-sound practice in current mainstream (that is, Western-style, rather than indigenous) circles.*

Linked to the first problem, if researchers and, more generally the public, were to understand the useful implications of musement or retroductive reasoning, we could perhaps remove the stigma attached to non-empirical beliefs, thus making them more available to the differently-

indigenous or non-indigenous mainstream. If we assume that scientism was at fault by over-emphasising the empirical, we put IK on a par with scientific knowledge and prevent its reification. When IK deals with non-empirical issues, this does not mean it is dealing with non-real issues. It will still, therefore, have to ensure that its claims are answerable to 'realness'. Thus IK can be debated and critiqued along with other forms of knowledge and can develop dynamically to contribute appropriately to current issues.

- *Indigenous people have demonstrated that their IK is used manipulatively and condescendingly.*

In this paper, I argue that we assume IK has the same ontology (stratified into the real, the actual and the empirical) as any other knowledge. This means engaging critically with IK assertions in the same way that we would any other assertion. An IK knowledge that is given the same status as any other knowledge, can no longer be referred to condescendingly. The equal status of IK knowledge will also be the opportunity for Western researchers to use IK that previously seemed unscientific because it was not measurable. Given the acceptance of musement as a valid logic, if the researchers are trying to ignore a piece of IK by saying: 'But, it can't be measured!', then the indigenous peoples can say: 'So what?', and insist the IK is taken seriously via retroductive criteria of validity that allow a stratified reality (i.e., things can be real even if not measurable or actually present). An epistemology that acknowledges musement will not prevent challenges to indigenous peoples knowledge. However, since IK will now hold its own with other knowledges, this will no longer be a problem. Previously, these challenges were avoided because of the idea that, as phenomenological artefacts, IK should not be expected to relate to a shared world.

Conclusion

In social science in general, and in IK specifically, musement (retroduction) should be an accepted logic, along with deduction and induction. This is because it suits aspects of social science and IK that are not always empirical. The usefulness of this position is illustrated by demonstrating how the acceptance of musement might help overcome some current ethical problems in IK, especially as it pertains to environmental and health education. To this end, I suggest that the use of musement in IK can allow Western environmental education practitioners to engage honestly and non-condescendingly with IK. It would require neither that researchers suspend their ontological commitment to 'reality', nor that they avoid the spiritual/non-empirical aspects of IK. Accepting musement as a valid form of reasoning means taking IK as seriously as any other knowledge, with the same acknowledgment of the lack of certainty of any knowledge. Taking something seriously means being able to critically discuss issues within it, perhaps even to disagree with it. Thus, Western environmental education practitioners should be able to engage in discussions with indigenous people as to the 'truthfulness' of particular IK, whether dealing with spiritual or other non-empirical matters, just as they would discuss the truthfulness of a scientific hypothesis with peers. Truthfulness in IK will often be measured by the effects of belief in God or spirit on ethical behaviours. Taking IK seriously also means being able to generously and actively engage with IK, as we seek to reimagine a new basis for normative ethics.

Notes on the Contributor

Leigh Price is a PhD candidate in the Department of Education, Rhodes University, South Africa. She is particularly interested in issues of research methodology pertinent to her doctoral research on environmental education in industry in Zimbabwe. Email: lprice@zol.co.zw.

Endnotes

- 1 Retroduction or abduction can simply be understood as ‘guessing’ (Brent, 1993:3): ‘Its occasion is a *surprise*. That is, some belief, active or passive, formulated or unformulated, has just been broken up... The mind seeks to bring the facts, as modified by the new discovery, into order; that is, to form a general conception embracing them. In some cases, it does this by an act of *generalisation*. In other cases, no new law is suggested, but only a peculiar state of facts that will “explain” the surprising phenomenon; and a law already known is recognised as applicable to the suggested hypothesis, so that the phenomenon, under that assumption, would not be surprising, but quite likely, or even would be a necessary result. This synthesis suggesting a new conception or hypothesis, is the Abduction. ... This is not accepted as shown to be *true*, nor even *probable* in the technical sense, - i.e., not probable in such a sense that underwriters could safely make it the basis of business, however multitudinous the cases might be; - but it is shown to be *likely*, in the sense of being some sort of approach to the truth, in an indefinite sense.’ (Peirce, ‘A Syllabus of Certain Topics of Logic’, EP 2:287, 1903; in Bergman and Paavola, undated, *Commens Dictionary of Peirce’s Terms*).
- 2 This paper was originally prepared as a presentation for the 8th International Research Seminar: Environmental and Health Education, Rhodes University, Grahamstown, South Africa 15-18 March 2005, whose theme included ‘ethics’.
- 3 Retroduction, along with induction, is one of a group of types of inferences from observed to unobserved things. *Induction* is the inference from past to future while *retroduction* is the inference from actual phenomena to structural causes. Critical realists also recognise *retrodiction*, as the inference from events to antecedent causes (retrodiction presupposes reductively achieved explanatory theories), and *transduction* as the inference from closed to open systems (Irwin, 1997). Charles Peirce was the first person to describe retroduction (Brent, 1993:3). Although Peirce’s writing distinguishes between retroduction and retrodiction, he did not give a name to the latter, subsuming it instead under the word retroduction that acts as an umbrella term for both (cf. Endnote 1).
- 4 There is a lack of agreement over whether there is a difference between retroduction and abduction. Some critical realist thinkers make a clear distinction (Danemark *et al.*, 2002:80, 110), namely that *abduction* is but a first creative phase in the seeing of patterns, while *retroduction* is a further logical step in the control of necessary and contingent relations between events. Charles Peirce (Bergman & Paavola, undated, the *Commens Dictionary of Peirce’s Terms*) argued that *retroduction* was a more appropriate word than *abduction* although he used both at different stages of his life work (Brent, 1993:3). In this paper, I use the terms interchangeably.
- 5 Many critical realists, from whom I borrow much in this paper, would be surprised to see my parallel use of Peirce (Mervyn Hartwig, pers. com). This is because Peirce is often unfairly associated with subjectivist pragmatists such as Richard Rorty (as in Bhaskar, 1993:16), whose philosophy has been

severely criticised by critical realists. However, Peirce himself was horrified at the way his word 'pragmatism' was being used by his successors, so much so that he changed the word to 'pragmaticism' to distance himself from the other pragmatists. At that time, he was most concerned by the pragmatism of William James (Haack, 1998).

- 6 Contrary to the academic habit of preferring large technical words, and following the example of Peirce, I will use the terms 'guesswork', 'musement' and 'pure play' interchangeably with retrodution and abduction in an attempt to demystify the terminology.
- 7 Bertilsson (2004) discusses the usefulness of abduction to social science, and makes the link between Peirce, critical realism, pragmatism and abduction.
- 8 By saying that our theory 'works for us' I do not imply that this means that believing something should make my life easier (fake reasoning) or back up pre-existing theories or ideologies (sham reasoning) (Haack, 1998:189-190). Rather, the term 'works for us' means that the knowledge best fits the evidence, including evidence that my actions may result in expected outcomes (although, because the world is an open system, an outcome that is unexpected may not require a complete revision of a theory). It may be helpful to remember that vulgar pragmatism will not result in surprising, new, knowledge; rather practitioners will deceptively 'find' knowledge that fits assumptions already held, or to advance themselves. However, pragmatism based on retroductive reasoning is by definition surprising, because it is new (at least to the person engaging in it). It is conceivable that retrodution could result in knowledge which may be inconvenient, even embarrassing, if it shows up misconceptions previously held dogmatically. For example, it might be embarrassing to admit that the beliefs of uneducated indigenous knowledge practitioners offer better ethical frameworks for environmental management than the beliefs of highly educated Western practitioners. Or, it might be inconvenient if a new belief results in my acknowledgement that I have an ethical responsibility to future generations and I now have to stop squandering resources.
- 9 These problems were originally identified in discussions I had with Jane Burt (pers. com).
- 10 For example, in an overview of IK in environmental education in Southern Africa, Masuku Van Damme and Neluvhalani (2004) do not mention any publications that deal with IK spirituality. In another example, in the working document formulated at the Second Indigenous Knowledge Forum on Biodiversity (1997), it was stated that indigenous people were concerned about 'The lack of recognition of the spiritual... perspectives of Indigenous Peoples in the Convention (on Biodiversity)'. Haverkort and Hiemstra (1996, no pagination) stated that '...our perspective on indigenous knowledge was somewhat utilitarian: we had examined the whole of indigenous knowledge, selecting those parts which we considered useful'.
- 11 At least three reviewers commented on the tentativeness of this paper, especially my frequent use of words such as 'perhaps'. This is a methodological choice, not evidence of my lack of conviction. It is consistent with a fallible approach to epistemology.
- 12 For a critique of the relativism of some epistemologies with regards indigenous knowledge, see Sayer (1999:172-187)
- 13 For example, research carried out in Botswana (Ntseane, 2004:18) stated that 'Because of existing cultural beliefs and values, it may be difficult to encourage the use of condoms'.
- 14 See Latour (1999) for a discussion of the role of politics in entrenching certain epistemologies. Here he argues that our epistemological choices have predominantly been chosen because they

- make it difficult for 'the mob' (in this case, the non-indigenous) to argue against the holders of the knowledge.
- 15 That IK does not currently inform normative ethics for the wider community has been noted by, for example, Masuku Van Damme and Neluvhalani (2004). The British government's Commission on Intellectual Property Rights (2002) acknowledged that despite efforts spanning two decades, there are yet to be significant advances on protecting and promoting indigenous knowledge.
- 16 This manipulation and condescension is eloquently explored by Shiva (1997).
- 17 In environmental education, Cheney (for example, Cheney, 2001) uses Native American indigenous knowledge to provide a persuasive argument for the use of the ethical as epistemology. His views are largely in line with the sentiments of this paper, although he slips into fideistic positions, such as when he says, 'what they say, it's true' (Section II, no pagination) and possibly also sham reasoning, such as, 'true to what you believe in' (Section II, no pagination). In addition, he does not distinguish between the vulgar pragmatism interpretation of 'what works for us' and the more Peircean pragmatism of 'what works for us' (cf. Endnote 6). However, his insistence that even the non-humans be given a voice implies that his epistemology is potentially not of the vulgar sort, since he thus provides a voice for an aspect of reality that is not purely linguistic, or human. In other words, his epistemology potentially avoids idealism and relativism.
- 18 Again, 'works for us' does not imply that the belief will make my life easier or back up pre-existing theories, ideologies or theologies.

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Personal Communications

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