



CAN UNCLASSIFIED



DRDC | RDDC  
technologyscience**technologie**

# A Critique of Critique

*Applied Criticism*

David Erickson  
DRDC – Suffield Research Centre

**Defence Research and Development Canada**

**Reference Document**

DRDC-RDDC-2018-D005

September 2019

CAN UNCLASSIFIED

## CAN UNCLASSIFIED

### IMPORTANT INFORMATIVE STATEMENTS

This document was reviewed for Controlled Goods by Defence Research and Development Canada (DRDC) using the Schedule to the *Defence Production Act*.

Disclaimer: This publication was prepared by Defence Research and Development Canada an agency of the Department of National Defence. The information contained in this publication has been derived and determined through best practice and adherence to the highest standards of responsible conduct of scientific research. This information is intended for the use of the Department of National Defence, the Canadian Armed Forces ("Canada") and Public Safety partners and, as permitted, may be shared with academia, industry, Canada's allies, and the public ("Third Parties"). Any use by, or any reliance on or decisions made based on this publication by Third Parties, are done at their own risk and responsibility. Canada does not assume any liability for any damages or losses which may arise from any use of, or reliance on, the publication.

Endorsement statement: This publication has been published by the Editorial Office of Defence Research and Development Canada, an agency of the Department of National Defence of Canada. Inquiries can be sent to: [Publications.DRDC-RDDC@drcd-rddc.gc.ca](mailto:Publications.DRDC-RDDC@drcd-rddc.gc.ca).

- © Her Majesty the Queen in Right of Canada (Department of National Defence), 2019
- © Sa Majesté la Reine en droit du Canada (Ministère de la Défense nationale), 2019

CAN UNCLASSIFIED

## Abstract

---

This Reference Document explores the epidemiological background for criticism applied to scientific research review. Criticism means the analysis and judgment of the merits and faults of a work. If criticism of scientific work has a beginning then who can, and must, say when it ends? If you are tasked with scientific review of another's work, this is a question that you must take seriously.

Badiou unmasked the reality that the ideas of truth and falsity exist, and must exist, outside the confines of any one philosophy. If they exist outside any one philosophy, then true and false exist outside of every philosophy. This profound knowledge has direct impact upon every intellectual endeavour because all truth escapes the model that presents it, and no model, no philosophy, and therefore no applied philosophy (natural philosophy) can escape this reality.

Armed with these realities, this Reference Document proscribes a method for critics to analyze scientific work so as to achieve the ideal amount of objectivity and fairness without inserting one's personal philosophy into the ideas of others. The role of the critic is not subsumption of what is there, but to reveal the truth within the presented philosophy. This is the Socratic Method.

Adopting this guidance will improve both the quality and quantity of criticism that is possible.

## Résumé

---

Le présent document de référence traite du contexte épistémologique de la critique appliquée à l'examen de la recherche scientifique. La critique désigne le fait d'analyser et de porter un jugement sur les qualités et les défauts d'une œuvre. Si la critique des travaux scientifiques a un commencement, alors qui peut ou qui doit dire où elle prend fin? Une telle question ne peut être prise à la légère lorsqu'on est chargé d'examiner le travail scientifique d'une autre personne.

Badiou a révélé que les concepts de vérité et de fausseté existaient dans la réalité et devaient exister hors des limites d'une philosophie. Si ces concepts existent à l'extérieur d'une philosophie, la vérité et la fausseté existent aussi à l'extérieur de toutes les philosophies. Cette connaissance profonde a une incidence directe sur chaque effort intellectuel parce toute vérité échappe au modèle qui la présente et ni le modèle, ni la philosophie et, par conséquent, ni la philosophie appliquée (philosophie naturelle) ne peut échapper à cette réalité.

Compte tenu de ces réalités, ce document de référence prescrit une méthode permettant aux critiques d'analyser le travail scientifique pour parvenir à un degré idéal d'objectivité et d'impartialité sans introduire leur propre philosophie dans les idées d'autrui. Le rôle du critique n'est pas d'établir une relation d'inclusion entre ces idées, mais de révéler la vérité dans la philosophie présentée. C'est la méthode socratique.

L'adoption de ces principes améliorera la qualité et la quantité des critiques éventuelles.

# Table of contents

---

Abstract . . . . . i  
Résumé . . . . . ii  
Table of contents . . . . . iii  
    Background . . . . . 1  
    Introduction . . . . . 1  
    Discussion . . . . . 1  
References . . . . . 5

This page intentionally left blank.

## Background

This Reference Document explores the epidemiological background for criticism applied to scientific research review.

## Introduction

A general definition describes **criticism** as, more or less, the analysis and judgment of the merits and faults of a work.

Of course, even that can be criticized, and therein lays the problem of all human effort expressed from one mind ( or group of minds) to society. If criticism of scientific work has a beginning then who can, and must, say when it ends? If you are tasked with scientific review of another's work, this is a question that you must take seriously.

## Discussion

When Immanuel Kant [1] wrote Critique of Pure Reason, it was assumed he was berating the other philosophical houses in a kind of apologist's soliloquy, that it was intended for David Hume's adherents or the experientialists, and other contemporaries. In fact, his intellectual cannons were aimed at his own kind, as it was, other rationalists that deviated from the goal and methods of reason. He implored the adherents of reason to be mindful of the scope and limits of their own beliefs about knowledge. One shouldn't concern oneself with how well his implorements were received because his ideas were largely ignored until later. If one is as lucky to write a tome as profound as Kant's, then it would be fair to state that if it was met with apathy that's a worse fate than a heated and agitated riposte. At least then, they remember who you are.

Kant's purpose was to remind philosophers that the amount of transcendental knowledge is scarce, that experience is a vital aspect to reason, and that skepticism is a scalpel with no trophies of it's own (or at least this is my critique of his critique).

Marcus Aurelius [2] pointed out, in Meditations:

### **There are many viewpoints on the matter of truth, of what does truth consist?**

Bertrand Russell [3] argued in favour of the theory that truth means correspondence, a relation between two ideas or objects, and that approaching greater correspondence is to approach a greater truth. How else can one approximate reality if one diverges from it?

It was Badiou [4][5] that unmasked the reality that the ideas of truth and falsity exist, and must exist, outside the confines **of any one philosophy**. If they exist outside any one philosophy, then true and false exist outside of every philosophy. This profound knowledge has direct impact upon every intellectual endeavour because all truth escapes the model that presents it, and no model, no philosophy, and therefore no applied philosophy (natural philosophy) can escape this reality. If you could, then, logically, you have discovered a transcendental truth unbounded in any philosophy and you should immediately stop all lesser pursuits and revolutionize philosophy. They sorely need your help.

Sloman [6] pointed out in his summary of human psychology, that mankind uses two centres of reasoning. The first and most common one is associative reasoning. Associative reasoning is the part of your neural processes that works natively with connections amongst things, relationships, concepts, or ideas. The other part of your faculties lies in the mathematical centres where one applies function rules, like taking the derivative, to an analysis or a formula. While we marvel and parade the fruits of the mathematical reason for all to see, the predominance of thinking in fact uses the less adept, and more general, associative reasoning to process the world around us.

With all this background knowledge, with all these great minds heard from, a convergence of their reasoning can be applied to notion of critique.

As you look upon the work of another, or others, you are embarking upon an exploration of the amalgamation of experience, of reason, of models, and the subjective remainder we add as our unique perspective to our knowledge. You may be affronted by differing styles, by less common phrasing, and communications means you find less persuasive as you might have done. You are not wrong, but yours also is not the only right. In any case, none of that is germane to your purpose.

If you are applying your mathematical reasoning to the double-checking of a mathematical model, a formula, and so on, in which case you can find a solution that corresponds, or not, with the bounds of that model, formula, and so on, then your role as critic is easy and definitive. You will either get the same answer or you will not, and the correspondence will verge towards or away from the truth. You are still applying the Socratic Method, you may even help the author correct simple mistakes. This is the easy part.

Knowing that mathematical rule-following amounts to a minor percentage of a work as presented in written or oral form, you are left with the remainder of your criticism—your analysis and judgment—applied to the majority which will use your associative reasoning faculties. Your faculties herein rely on abstracts, concepts, and notions, armed by your experience and knowledge, but they cannot—and must not—encompass only ONE truth. Badiou insists your truth is not separate from every other truth, the truth. Your criticisms portray A truth from your perspective. Your goal with this majority of criticism, that many people do poorly enough to deserve criticism, is to apply your skepticism to what is in front of your reason. You are not in the business of rejection, you are in the truth discovery business.

If your truth is not THE truth, and the authors' truth is not THE truth, then how can one resolve this dispute? Most critics default to assume they have the right to reject another's truth. How can this be so? You cannot establish supremacy of one over the other as it pertains to associative reasoning. Russell is your guide here, your objective is to aim that author ( or authors) towards a truth that is more CORRESPONDANT<sup>1</sup> between the two perspectives. Another way to state it, you are searching for a COHERENCE<sup>2</sup> between the two. In the sciences, this means aiming towards greater fidelity with what is in the natural world. Your goal is redirection, not suppression, of what is written.

One set of prescriptive tools one can use to consider when judging and analyzing, is to consider the arguments against a set of reasoned concepts. I tend not to like templates, and was schooled by my infantry instructor that there was no template for tactics. To my thinking, this truism must have an approximate in the criticism world. Paul [7][8] recommended in his Critical Thinking series to consider

---

<sup>1</sup> A close similarity, connection, or equivalence.

<sup>2</sup> The quality of forming a unified whole.

the intellectual concepts of clarity, accuracy, precision, relevance, depth, breadth, logic, fairness, conciseness, and suitability when applied to critical thinking. Each of these will provide a filter when you read each argument in turn. While these concepts are not all-definitive nor all-inclusive they are a procedural baseline for consideration. They are, in general, perspectives on skepticism that can reveal falsity.

Skepticism is a scalpel, it pierces the surface—suppositions, corollaries, predicates, antecedents, theories, axioms, and so on—of an organ of thought (a bounded argument ) so as to reveal the merits and problems, fallacies, and so on, associated with every piece contained within. Skepticism cannot suture, it cannot meld together illogics. What it can do is assess the pieces, laid bare, for where these sub-arguments hold and where they do not. It will create more clarity by revelation, not by excisement.

As you apply skepticism, you reveal the better closer nature of the argument as meant, in comparison to as written.

Here is where your associative reasoning comes back into play, after you have exposed the merits and problems inherent in the argument by skepticism, it is your duty to suggest means to recover the symmetry and completeness of the argument. You can point at the sources of extra knowledge where one can find the means to reconnect the pieces. Or you can recommend how better to frame the argument so as it draws closer to nature.

Even as you uncover falsity from truth, you are making the argument better, because your error finding and contextualizing ( to place something in context) refine where the argument might be true, might be clearer, and might be more accurate.

When you conclude your criticism, you will embody that in another work. In some fields, especially philosophy, this feat is a serious work in and of itself. Your mechanism for improvement of the collective knowledge of civilization is to represent your critique in a manner that makes the task of the original authors easier to achieve correspondence. Your goal is to provide the authors all they require to return to you a perfect manuscript in one iteration.

In order to speed up the process, you will be most effective to construct your own argument in a SMART manner. SMART stands for Specific, Measurable, Achievable, Realistic, and Timely. You do not want to reread an argument more than twice, once after criticism and the second for acceptance or not. Rather than make your expectations a guessing game, or an arbitrary and undefinable end state few people might envision, you should make clear, concise recommendations that, in each and every case, define tangible changes to the argument as written. It might be the case that the entire argument is upended and needs to start anew, but you must be able to justify that by demonstrating you cannot find truth within it.

Why must this be so? If you can't make your counter-argument in as definable and achievable a nature as the argument you read, then how can you expect another thinker to uncover your intent? Remember, your truth is not alone. By being specific, you focus on the flaws needing adjustment. By defining a measure, the authors can self-measure the corrected version thereby reduce iterations. By reducing expectations to the achievable, you reduce the author's mistrust that your demands amount to a nebulous unsatisfiable. By asking for reasonable edits, you take away any rejection of the intent of your criticism. By returning the work in a timely manner, you allow the authors to remember what they wrote currently enough to keep inefficiency to a minimum. No one will live to see the architectonic, Kant's metaphor for the sum of all knowledge expounded in Critique of Pure Reason, but we can all do a small part in achieving it, we

can can reason better and make that reality a nearer goal for mankind by diligently and professionally discharging the duties of critic, guiding authors towards a common truth.

## References

---

- [1] Kant, I., *Critique of Pure Reason*, Penguin (1781).
- [2] Aurelius, M., *Meditations*, Peter Pauper Press, London (1942).
- [3] Badiou, A., *L'Être et L'Événement* (1988).
- [4] Badiou, A., *Logics of Worlds: Being and Event II*, No. 617, Continuum (2009).
- [5] Russell, B., *Truth as Correspondence: A Reply to James*, *Philosophical Essays*, 116–126 (1966).
- [6] Sloman, S. A., *Heuristics and biases: The psychology of intuitive judgment*, ch. Two systems of reasoning, 379–396, Cambridge University Press., New York, NY, US (1996).
- [7] Paul, R. W., *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*, Foundation for Critical Thinking (2012).
- [8] Paul, R. W., and Elder, D. L., *The Miniature Guide to Critical Thinking Concepts and Tools*, Foundation for Critical Thinking (2006).

**DOCUMENT CONTROL DATA**

\*Security markings for the title, authors, abstract and keywords must be entered when the document is sensitive

1. ORIGINATOR (Name and address of the organization preparing the document. A DRDC Centre sponsoring a contractor's report, or tasking agency, is entered in Section 8.)  DRDC – Suffield Research Centre Defence Research and Development Canada P.O. Box 4000, Station Main Medicine Hat, Alberta T1A 8K6 Canada		2a. SECURITY MARKING (Overall security marking of the document including special supplemental markings if applicable.)  CAN UNCLASSIFIED	
		2b. CONTROLLED GOODS  NON-CONTROLLED GOODS DMC A	
3. TITLE (The document title and sub-title as indicated on the title page.)  A Critique of Critique: Applied Criticism			
4. AUTHORS (Last name, followed by initials – ranks, titles, etc., not to be used)  Erickson, D.			
5. DATE OF PUBLICATION (Month and year of publication of document.)  September 2019	6a. NO. OF PAGES (Total pages, including Annexes, excluding DCD, covering and verso pages.)  9	6b. NO. OF REFS (Total references cited.)  8	
7. DOCUMENT CATEGORY (e.g., Scientific Report, Contract Report, Scientific Letter.)  Reference Document			
8. SPONSORING CENTRE (The name and address of the department project office or laboratory sponsoring the research and development.)  DRDC – Suffield Research Centre Defence Research and Development Canada P.O. Box 4000, Station Main Medicine Hat, Alberta T1A 8K6 Canada			
9a. PROJECT OR GRANT NO. (If appropriate, the applicable research and development project or grant number under which the document was written. Please specify whether project or grant.)  02ea - Contested Urban Environment Stressors		9b. CONTRACT NO. (If appropriate, the applicable number under which the document was written.)	
10a. DRDC PUBLICATION NUMBER (The official document number by which the document is identified by the originating activity. This number must be unique to this document.)  DRDC-RDDC-2018-D005		10b. OTHER DOCUMENT NO(s). (Any other numbers which may be assigned this document either by the originator or by the sponsor.)	
11a. FUTURE DISTRIBUTION WITHIN CANADA (Approval for further dissemination of the document. Security classification must also be considered.)  Public release			
11b. FUTURE DISTRIBUTION OUTSIDE CANADA (Approval for further dissemination of the document. Security classification must also be considered.)			
12. KEYWORDS, DESCRIPTORS or IDENTIFIERS (Use semi-colon as a delimiter.)  Common knowledge			
13. ABSTRACT (When available in the document, the French version of the abstract must be included here.)  This Reference Document explores the epidemiological background for criticism applied to			

scientific research review. Criticism means the analysis and judgment of the merits and faults of a work. If criticism of scientific work has a beginning then who can, and must, say when it ends? If you are tasked with scientific review of another's work, this is a question that you must take seriously.

Badiou unmasked the reality that the ideas of truth and falsity exist, and must exist, outside the confines of any one philosophy. If they exist outside any one philosophy, then true and false exist outside of every philosophy. This profound knowledge has direct impact upon every intellectual endeavour because all truth escapes the model that presents it, and no model, no philosophy, and therefore no applied philosophy (natural philosophy) can escape this reality.

Armed with these realities, this Reference Document proscribes a method for critics to analyze scientific work so as to achieve the ideal amount of objectivity and fairness without inserting one's personal philosophy into the ideas of others. The role of the critic is not subsumption of what is there, but to reveal the truth within the presented philosophy. This is the Socratic Method.

Adopting this guidance will improve both the quality and quantity of criticism that is possible.

Le présent document de référence traite du contexte épistémologique de la critique appliquée à l'examen de la recherche scientifique. La critique désigne le fait d'analyser et de porter un jugement sur les qualités et les défauts d'une œuvre. Si la critique des travaux scientifiques a un commencement, alors qui peut ou qui doit dire où elle prend fin? Une telle question ne peut être prise à la légère lorsqu'on est chargé d'examiner le travail scientifique d'une autre personne.

Badiou a révélé que les concepts de vérité et de fausseté existaient dans la réalité et devaient exister hors des limites d'une philosophie. Si ces concepts existent à l'extérieur d'une philosophie, la vérité et la fausseté existent aussi à l'extérieur de toutes les philosophies. Cette connaissance profonde a une incidence directe sur chaque effort intellectuel parce toute vérité échappe au modèle qui la présente et ni le modèle, ni la philosophie et, par conséquent, ni la philosophie appliquée (philosophie naturelle) ne peut échapper à cette réalité.

Compte tenu de ces réalités, ce document de référence prescrit une méthode permettant aux critiques d'analyser le travail scientifique pour parvenir à un degré idéal d'objectivité et d'impartialité sans introduire leur propre philosophie dans les idées d'autrui. Le rôle du critique n'est pas d'établir une relation d'inclusion entre ces idées, mais de révéler la vérité dans la philosophie présentée. C'est la méthode socratique.

L'adoption de ces principes améliorera la qualité et la quantité des critiques éventuelles.