

REVIEW ARTICLE

Edward Craig (General Ed.) *Routledge Encyclopedia of Philosophy*, Routledge, London/New York, 1998, Vols. 1–10 ISBN 0415073103

I. HARD COPY VERSION (reviewed by Jaakko Hintikka)

Why should anyone go to the immense trouble of editing a ten-volume encyclopedia of philosophy? And why should anyone buy such a work? The obvious answer is: Philosophers need information. However wide one's knowledge is, an active professional philosopher will ever so often find himself or herself in a position of needing substantial, up-to-date information on subjects which lie in one's own field but which are not a part of one's working knowledge. I find myself constantly wondering whether this or that development outside my immediate topic of research might be relevant to it. For instance, I may be working on topical problems in the philosophy of mathematics. Sooner or later I will probably have to find my way around the recent history of the subject. I will have to relate my ideas not only to those of Tarski, Hilbert, Gödel, or Brouwer but also to those of less central figures, such as Euler, Kronecker, Dedekind, Weyl, or Hao Wang. It would obviously be most useful to be able to orient oneself by reading an up-to-date substantial article of each of these scholars and gentlemen. Or I may be an editor judging a paper which is not within the field in which I am working myself. It is then extremely handy to be able to check quickly what the state of the art is on that particular subject.

How well does the new *Routledge Encyclopedia of Philosophy* serve such purposes? By and large, reasonably well, it seems to me on evidence, certainly better than I expected. (Needless to say, my evidence comes largely from those fields of philosophy that I know best.) As anecdotal evidence, I can confess that I found myself seriously consulting the *Encyclopedia* within an hour of receiving it and installing it in my office. One of the useful features of the *Routledge Encyclopedia* is that its articles are pitched on the right level. They are long and detailed enough to provide substantial knowledge of the subjects covered, and yet they are accessible



enough to be used by all professional philosophers and most of the time also by anyone who is seriously interested in the subject.

I also like the idea of including articles on persons who have not been the main players on the scene of professional philosophy but whose work is relevant to philosophical problems, for instance John von Neumann, Jean Piaget, Hermann Weyl, Alan Turing, Leopold Kronecker, J. H. Lambert, J. M. Keynes, to mention only a few close to my own activities. The same goes for apparently peripheral but important concepts, such as compositionality, forcing, measurement, lambda calculus, again mentioning entries only from my own active fields of interest.

Some other thinkers represented in the *Encyclopedia* are less well known than they actually are merely because of geographical or historical accidents. It is therefore eminently appropriate to have articles on, for instance, Axel Hägerström, Stanislaw Lesniewski, Tadeusz Kotarbinski, Jan Patocka and G. H. von Wright.

Similar things can be said of earlier thinkers. The articles on minor historical figures seem to me especially useful. If I should ever need first-aid information on, say, Ptolemy, Proclus, Pyrrho, or Prodicus, I know where to turn.

However, even though the *Routledge Encyclopedia* has a good batting average, it is far from perfect. To use philosophy of mathematics and philosophy of physics as test cases, there are disturbing omissions. There is for instance no article on L. E. J. Brouwer. The obvious rejoinder is likely to be to point out that Brouwer's philosophical significance is covered by the substantial articles on "Intuitionism" – this one is especially informative – and on "Intuitionistic Logic and Antirealism". This kind of answer may be adequate in the case of Brouwer, but not in the case of David Hilbert, who has not rated a personal article, either, in the eyes of the editor. Again, there is admittedly an article on "Hilbert's Programme and Formalism". But whoever might think that this subject exhausts Hilbert's philosophical relevance is out of his depth. True to his assignment, the author of this article has nothing to say of some of the topics that were absolutely crucial to Hilbert's overall thinking about mathematics and science, for instance Hilbert's views on the role of the axiomatic method in science. There is also nothing about Hilbert's epsilon technique, which is highly suggestive of his views on the nature of logic. This gap would not be as glaring if there had been a solid article on the axiomatic method – surely a topic worth philosophers' interest.

Among other figures, there are also surprising omissions such as Euler, Gauss, Boltzmann, Hertz and Hao Wang, to name a few.

Not all of the articles are on the same level of coverage, either. The article on definition fails to cover the actual logical theory of different kinds of definition. (At least Veikko Rantala's monograph *Aspects of Definability* should have been mentioned.) Moreover, the important, closely related concept of identifiability is not even mentioned, although it might arguably have merited even a separate article. For one thing, it is much clearer a notion than the currently fashionable notion of than supervenience which has rated a separate entry. In reality, supervenience is at best a messy notion which arguably should be analyzed in terms of identifiability.

Seldom does one come across straightforward mistakes. There are some, however. For one example, in the article on "Sense-data" we read:

The term 'sense-datum' was coined early in this century by Bertrand Russell. ... In this century early advocates of sense-data intended the term 'sense-datum' to be neutral.

Doesn't the author know that Russell in his early thought argued passionately that sense-data are part of the physical world?

Some of the imperfections of this encyclopedia can be laid safely on the doorsteps of the entire philosophical community rather than that of its editor or of its contributors individually. Several important philosophical concepts have not been given independent entries. I cannot help suspecting that they include a number of concepts whose semantical history remains to be studied or is for some other reason unknown to most philosophers. Cases in point include the concepts of intuition, plenitude, sympathy, the whole family of concepts relating sense and sensitivity, nature (whose scope is not exhausted by articles on "Nature and convention" and on "Nature, aesthetic appreciation of"), etc. In some other cases, the systematic articles on a central concept do not bring out its conceptual history at all. Perhaps the most striking instances of this is offered by the different articles on induction and on analysis.

In some cases, I miss synthetic articles on a contemporarily interesting topic, the information about which is now distributed into several articles. Examples of such entries might be "Game theory", "Bayesian inference" and "Information".

It is likewise a sign of the times rather than a sign of the editor's oversight that in spite of the tremendous recent interest in cognitive science among philosophers, there has not been enough work done on concrete psychological problems by philosophers to have necessitated articles on subjects like autism, dyslexia, different forms of agnosia etc. (Neither of the two able and informative articles on color mention the phenomenon of color agnosia.)

It is perhaps defensible for the editor to include entries on topics whose serious philosophical importance is dubious but which have reached the

status of a popular fad, such as fuzzy logic, paraconsistent logics, multiple-conclusion logic, etc. But in my judgment, many such articles should have been much more critical. Another example of ideas uncritically accepted by the philosophical community and equally uncritically recorded by the *Encyclopedia* contributors is Chaitin's pretentious "interpretation" of Gödel's incompleteness theorem which has turned out not to deliver the insights it promised. One can even argue that the entire problem of realism is insufficiently articulated to bear the weight of two articles. But it is obvious that the general editor would not be susceptible to my arguments in this particular case, since he has authored the article on realism and antirealism himself.

On balance, there is obviously a great deal to be said for the *Routledge Encyclopedia* from the perspective of an individual philosopher, in spite of my carping. However, viewed from the vantage point of the entire philosophical community, there is a very real danger in the encyclopedias, handbooks, comparisons, and anthologies that are proliferating in these days. They tend to freeze the status quo and make it increasingly difficult for new unconventional ideas to make a breakthrough.

Dangers of this kind are impossible to document adequately in the case of a contemporary reference work, for that would presuppose knowing where the development of philosophy is going to go. But if I may switch roles for a moment and speak as an individual philosopher, I am very seriously concerned with the prospect of having my new ideas criticized and rejected merely because they constitute a threat to received wisdom – supposed wisdom which is even authoritatively codified in a respectable and respected encyclopedia. As a concrete case in point, it is my educated opinion that all the different articles having to do with truth and truth-definitions – the five articles on truth, some of the articles on semantics, especially "Semantics, Paradoxes and Theories of Truth", and such articles as "Tarski's Definition of Truth" and "Meaning and Truth" – are to different degrees already dated in that they miss the possibility and significance of truth-definitions for suitable first-order languages in the same language and the implications of this possibility. Admittedly, it would have been impossible for the editor to anticipate results that were not known or perhaps not even reached when the *Encyclopedia* was planned. But it is not equally obvious to me that the authors of these various articles have left the possibility of new developments open for instance, by pointing out the dependence of received views on important presuppositions. Yet, nowhere in the *Encyclopedia* articles is it pointed out that Tarski-type truth-definitions are predicated on compositionality. By and large, explicit truth-definitions and truth predicates emerge from these articles as something that is diffi-

cult to reach and that can easily have dangerous consequences. In reality, explicit truth-predicates are perfectly straightforward to formulate without any danger of paradoxes, once we straighten out our basic logic. But no one would expect that on the basis of these encyclopedia articles.

An important traditional unclarity in the foundations of logic is in any case canonized into encyclopedic lore in the articles dealing with the notions of completeness and incompleteness. At the top of the list are the articles “Gödel’s Theorems” and “Logic in the Early 20th Century”. The former is otherwise excellent, except for the fact that in it Gödel’s completeness proof for first-order *logic* is treated more or less on a par with his incompleteness proof for elementary *arithmetic*. Yet, for anybody who takes the model-theoretic viewpoint seriously must distinguish the two kinds of completeness. The former result shows in effect that the class of *valid* first-order formulas is recursively enumerable, whereas the latter shows that the class of *true* arithmetical sentences is not. Both the kinds of completeness and incompleteness involved here are different from complete (e.g., categorical) axiomatizability, which means that the axiom system in question has the intended class of structures as its models. Admittedly, a careful reader can find some of those distinctions made in the small print of the article on Gödel’s results, leaving what is said there technically correct. But these distinctions are much more important for the philosophical consequences of Gödel’s results than the authors bring out. For instance, one can say that “the incompleteness theorems were devastating” only if one is blind to the model-theoretical approaches to logic. Here the inherited bias against model-theoretical ideas is still rearing its ugly head.

Other articles in the *Routledge Encyclopedia* which are in the process of being made out-of-date by current developments include the entries on “Questions” and “Compositionality”. The same will in my judgement – even though I am so far in a very small minority – soon be the case with some of the basic articles on logic. The reason is that the received Frege-Russell logic of quantifiers turns out to be only a fragment of their true unrestricted logic. Thus no mean matters are being mooted here. Speaking generally, apart from particular examples, the question must be asked: How great a time lag is permissible for an encyclopedia to catch up with radically new developments? And, more pertinently here, is it clear that an encyclopedia in reality does not slow down such a catching-up process in the philosophical community?

The danger of freezing the status quo in philosophy is at this time not only very real but acute. There are two all too familiar confluent reasons for this danger. One of them is the structure of graduate education in philo-

sophy in the United States. Typically, a student spends the first couple of years of his or her graduate education in philosophy in acquiring an overall training in philosophy, which equally typically takes the form of preparing for one's qualifying examination. After that, the student is normally under a heavy educational and financial pressure to put together a dissertation quickly, and put together a safe dissertation that will land him or her a job quickly.

Under such circumstances, the student cannot be expected to solve the problems of Quine, Davidson, Kripke or Carnap. Instead, the student will write, not about their problems, but about what they say about these problems, just as if Quine were a contemporary of Hume or Kripke a contemporary of Frege. Most importantly, the student will never, never dare to criticize these icons, for more likely than not some of his or her tenure letters will eventually come from the great icon's former students and followers. The result is a flow of dissertations dealing with our contemporaries as if they were historical figures, writers to be interpreted, discussed, compared, and commented on, perhaps even deconstructed, but not as contributors to a genuine enterprise of problem-solving. Above all, these icons are not to be criticized.

At the same time, the deluge of revised dissertations and other products of the "publish or perish" system has made philosophical monographs an endangered species in the jungle of scholarly publishing. Maybe most of they philosophical monographs of these days deserve to become extinct. In any case, publishers, particularly commercial publishers, find it more profitable to bring out, if not textbooks, then encyclopedias, handbooks, companions, anthologies and other such paper products whose main function is to define the status quo, to comment on it and to document it. Not only is there little incentive for invention, there is not a natural slot for disseminating genuinely new ideas in such an environment.

This state of affairs is reflected by the *Routledge Encyclopedia*. By and large, as far as I have been able to ascertain, its historical articles are on a high level. In a sense, so are articles on contemporary and systematic subjects. But when they are successful, as they typically are, their merits are usually the same as those of historical articles. One reads them for information and perhaps even insight, but not as sources of criticism or inspiration. Maybe this is inevitable. And most likely the blame (or praise) for the result is due to the entire philosophical community rather than to the editor of one encyclopedia. But is it really a sign of health that there is not a breath of criticism in these supposedly definitive encyclopedia articles of the contemporary icons of philosophy? I am not the only philosopher who has become convinced that there is no payoff in trying to continue Kripke's

or Quine's ideas or explicate their fine print. Where can I send my students for *critical* information about them? I cannot help thinking that there is something dangerously wrong with the present scene in philosophy, and I would like at the very least to raise the question whether it ought to be part of the job description of encyclopedias to encourage criticism much more. Perhaps the present-day encyclopedists ought to begin to cultivate the spirit of their most famous predecessor, the *Encyclopédie* of Diderot and D'Alembert.

This lack of a critical perspective can be illustrated by reference of some of the articles in the *Encyclopedia*. In some of the more blatant cases, an author of an article has not only decided to reinforce current views but has chosen to propagate one particular line of thought. Such articles should not have any place in a respectable encyclopedia. Unfortunate cases in point include the article on anaphora, where the author is presenting, from the multitude of current approaches to anaphora, only one in any detail whatsoever. In this case, this preferred approach is not even the most commonly accepted one.

Among the most unfortunate articles there is the long one on Wittgenstein. It is arguably a part of the function of an encyclopedia article to summarize widespread current views whether they will in the end be the right ones or not. And equally arguably, this is what happens in the Wittgenstein article. But at the very least there should be awareness of other perspectives and awareness of the materials that might enable the reader to form a judgment of his or her own. The author of the Wittgenstein article "presents Wittgenstein [in his later philosophy] as inviting us to abandon the idea of our meanings and judgments being securely moored to something outside us". Yet there is an abundance of direct evidence that the crucial step in the evolution of Wittgenstein's later philosophy was his adoption of the idea of the primacy of physicalistic languages. As Wittgenstein himself is reported to have said, "The world we live in is the world of sense-data, but the world we speak of in language is the world of physical objects". The idea of physicalistic language was also claimed in so many words by Wittgenstein to have been stolen from him by Carnap. Here it is not only the case that there are alternatives to the interpretation the author presents as the authoritative. There is plenty of information around to show that the encyclopedia article author's interpretation, standard or not, just is not even on the map as a viable account of what Wittgenstein was doing in his later philosophy. Even if the author thinks otherwise, she should have given us the means of judging the matter ourselves.

There are plenty of other dubious assertions in the Wittgenstein article. For instance, the author asserts that Wittgenstein rejected in the *Tractatus*

Russell's idea that reality comes divided into different types and that a sentence is meaningful only if the elements picked out by its components are of suitably related types. This is almost certainly wrong. Wittgenstein's point is, rather, that in the right kind of symbolism the different symbols are of the same logical type as what they stand for, and hence cannot be combined wrongly. And even if I am wrong here, it is not the business of an encyclopedia to peddle dubious interpretations as authoritative truths. Another gaping hole in the article is that the crucial contrast between physical and phenomenological languages which was the focal point of Wittgenstein's thinking during the crucial year 1929, is not even mentioned.

The Wittgenstein article, like so many others, reflects the shortcomings of an entire tradition of scholars. In this case, one such shortcoming is to consider Wittgenstein in a veritable historical vacuum. There is nothing in the article about the relation of the picture theory of the *Tractatus* to Russell's theories of acquaintance, about the relation of Wittgenstein's remarks on ethics and aesthetics in the *Tractatus* to the views of Moore, about the striking similarity between Mach's views on personal identity and Wittgenstein's comments on solipsism, about Wittgenstein's relation to the important Mach vs. Boltzmann controversy, about Wittgenstein's claim that many of Carnap's views are not only identical with those of the *Tractatus* but plagiarized from it, or about the revealing relationship between Ramsey and Wittgenstein.

Wittgenstein's case prompts other questions. If the author of an encyclopedia article on Wittgenstein had tried seriously to reach an overview on how he has been interpreted, she could not have helped being struck not only by the differences between different interpretations, but by the sheer irresponsibility of many of the current interpretations. In some cases, these "interpretations" are contradicted by Wittgenstein's explicit statements. Did Wittgenstein think that language is an intrinsically social phenomenon? What he actually says is this:

We can indeed imagine a Robinson [Crusoe] using a language for himself, but then he must *behave* a certain way . . .

Was logical positivism founded "on a deep misunderstanding of the *Tractatus*"? In a letter to Schlick in 1932 Wittgenstein accuses Carnap of plagiarizing half dozen crucial ideas from the *Tractatus*. Was Wittgenstein an anti-representationalist in his later philosophy?

The world we live in is the world of sense data, but the world we speak of in language is the world of physical objects.

I doubt that any philosopher has ever been exploited as shamelessly by so many different selfish purposes as Wittgenstein. An encyclopedia article that does not show any awareness of this extraordinary state of affairs is not serving our profession in the best possible way, not even if it does not itself instantiate all of the mistakes. Here a contributor's uncritical attitude to a corrupt *status quo* has resulted in the encyclopedia's missing a major chance of doing a badly needed service to contemporary philosophy.

Another strange perspective is presented by the article on "Poland, Philosophy In". The editors of the encyclopedia have deemed the two prominent Polish philosophers Tadeusz Kotarbiński and Leon Petrazycki (among others) so important as to merit a separate article. Surprisingly, the author of the article on philosophy in Poland snubs his general editor by not finding these two scholars and gentlemen even worthy of mention. It is hard not to suspect an ideological bias in this case.

Perhaps the most blatant case of special pleading is the article on "Pragmatism" by Richard Rorty. The first and foremost purpose of this article ought to be of course to provide factual information about this important philosophical movement. But whoever goes to Rorty's article with such expectations will be sorely disappointed. Rorty never explains what he means by pragmatism. He does not mean the views of the actual pragmatist thinkers, for Rorty finds that they had little in common. He quotes various explanations, but they do not add up to a coherent view. Some of Rorty's claims are little short of bizarre, for instance that "pragmatism's strongest point" is "its refusal to countenance a discontinuity between human abilities and those of other animals".

By and large, Rorty tends to classify all anti-representationalist tendencies in twentieth-century philosophy as "pragmatist". This is at best tendentious both for systematic and for historical reasons. What the actual pragmatists did in the theory of language was to emphasize the role of human activities in the constitution of meaning. But this does not entail anti-representationalism. It is quite realistically possible to think of those very human activities as constituting the representational relations between language and the world. Nor is this a merely academic possibility. It is what Wittgenstein's language-games were introduced by him to do. And as far as such actual pragmatists as Peirce are concerned, it is not easy to indict them of anti-representationalism. Rorty is here, as in his other writings, confusing with each other two different questions, on the one hand the problem of representationalism and on the other hand of the question whether those representational relations can be themselves represented in language.

Rorty's attempts to implicate all and sundry philosophers in his pseudo-pragmatism are made on the flimsiest of grounds. For instance, Thomas Kuhn is claimed by Rorty for the "pragmatist" cause on the grounds that his writings had the effect of making "many post-positivist analytic philosophers sympathetic to Dewey's suspicions of the Cartesian-Kantian problematic". By this token, a philosopher who tries to make analytic philosophers "sympathetic", say, to Ernst Cassirer's ideas must be classified as neo-Kantian. Again Davidson is for Rorty but another pragmatist because his work is "reminiscent" of the classical pragmatists' attempts to be faithful to Darwin. It is obvious that such attributions show a distinct lack of historical sense and historical sensitivity.

Other examples abound. For instance, what has one of Rorty's usual suspects, W. V. Quine, to say of his relationship to pragmatism?

An article by [Ernest Gellner] about me under the title "The last pragmatist" dominated a 1975 issue of the *Times Literary Supplement* . . . He had misunderstood my position, and in the public discussion I undertook to clarify matters.

Nor is this distancing on Quine's part from pragmatism a personal hangover from the tensions between him and Peirce's admirer and follower C. I. Lewis in Harvard's Philosophy Department. The overwhelming fact is that Quine and the pragmatists are looking at language in diametrically opposite ways, the pragmatists as a tool we can consciously create, modify and discuss even in the same language in the light of the uses we want to make of it, while for Quine it is an object of naturalistic study, to be approached via the linguistic behavior of suitable informants but not via our conscious, rational conventions and other decisions.

Professor Rorty is more than welcome to voice his interpretations in his books and papers where they can be freely discussed and criticized as a part of the on going dialogue among philosophers. However, it is in my opinion unprofessional for him to peddle them under the guise of a supposedly authoritative encyclopedia article. Why is it that in reading this article I am reminded of Rorty's own statement that you become a "pragmatist" by admitting human desires into your criterion of truth?

Or is the wishful thinking in this case done by the editor? One of the best features of the *Routledge Encyclopedia* is the use of many knowledgeable but less well-known contributors. In the case of the pragmatism article, it seems to have been forgotten that fashionable names are not necessarily the best contributors.

Historical articles are by and large less likely than topical ones to have the effect of discouraging new ideas. But even this is partly done merely because there usually are fewer genuinely new interpretational ideas in the offing. And in fact one can easily find examples of interpretations

codified in the encyclopedia articles that can – and sometimes should – be challenged. As a random but important example, in the article of the most thoroughly studied philosopher of all times, Aristotle, we read that the famous formula “a science of being *qua* being” serves to highlight the universality of metaphysics in the sense of having as its scope all beings. It is far from clear that this is the only or even the only plausible reading.

All told, even after all these caveats, I am pleased that this encyclopedia has been edited and even more pleased to possess a set. However, perhaps it should carry on a corner of the back cover a philosopher-general’s warning: This product may be hazardous to your creativity.

II. CD-ROM VERSION (reviewed by Paul Bohan-Broderick)

The most innovative aspect of the *Routledge Encyclopedia of Philosophy* is its presentation in digital media. The electronic version is shipped on a CD-ROM, but it is designed, licensed and priced for use on a small network of computers in a library or department.

The electronic version of REP presented many interesting features in the short try-out period that it received. I should note that although many of the following comments relate to the use of the Encyclopedia as a teaching tool, I have not used it in a class setting.

1. The entire Encyclopedia fulfills some of the enthusiastic speculations that have accompanied most discussions of hypertext. At this time, it is probably unnecessary to explain to the average reader what hypertext is, however, it may be necessary to explain what hypertext is good for. In this case, it allows a new way of interacting with the encyclopedia, more like browsing the web than reading a book. It adds a new level compared to the Web. Not only is it searchable and cross-linked, but there is more than one variety of link, the cross-links are the opinions of experts in the relevant fields, and there is a feature for new links to be added by an instructor or traded between collaborators. I have always thought that hypertext lent itself more to academic prose (that is, bearing many explicit references and direction to other fragments of text) than to any other variety. After all, what are footnotes, endnotes and citations but links without automation. The REP makes good on the promise of these technologies.
2. The entire Encyclopedia is searchable, a single potentially unseamed source. This introduces the danger that one could spend hours following the most tenuous connections of similarities between ideas. Regular users of the World Wide Web are no doubt aware of this danger. On the other hand, many of the connections may be seeds

of worthwhile scholarship. For the more serious minded researcher, being able to read articles and instantly access information relating to historical or theoretical context will be, at least, a great convenience.

3. Perhaps the most useful pedagogical element of the digital edition of the encyclopedia is the capacity for a professor to establish a path, a custom designed set of book marks, through the vast materials of the encyclopedia. These annotations and directions could be left on the local network for students, similar to the way that special materials can be left on reserve in the library. I would have liked to see more attention given to the instructor's ability to provide "value-added" materials to the text. (In addition to widening the usefulness of the REP, it would also help the publishers protect their economic interests by making it more difficult to use parts of the encyclopedia without context. The guide would be useless without the full encyclopedia, which in turn would be useless without both the traditional text components and the mark-up technologies that make them possible.)
4. The REP has provided preset subject guides for those who would like their students to access the resources, but are not prepared to develop their own guides. These guides focus on 12 different subject matters, 5 religious traditions and 5 varieties of world philosophies. In addition to providing a quick guide to a student in a standard class, such as aesthetics, there is also some value in having all the material on Slavonic philosophy, for instance, easily accessible in a single list. Journal entries are also grouped by historical era. These guides provide fertile ground for undergraduates doing early research on a paper. They also present one more source for uncited references, perhaps more useful for this purpose than the traditional Monarch or Cliff notes. Vigilant graders should be aware of this resource.
5. The bibliography of the entire Encyclopedia is available as a unified, searchable database. This alone is a tremendous resource. It also shows up the possible imperfections of the bibliography. As always, scholars use such resources at their own risk and nothing will ever replace citing from the original source. Since searches bring back a relatively minimal amount of information (compared to physical inspection of texts in a university library), it becomes easy to confuse books with similar publication information. (The standard academic algorithm for generating titles from a few keywords doesn't help any.) On the other hand, having an automated kernel of a bibliography available with a few keystrokes is a wonderful tool. Bibliographical "experiments" can be run to find out if small variations on an idea yield different

sorts of established literatures. Unanticipated connections are revealed instantly.

This is really the first large scale effort to implement these features for academic philosophy. As such, many of these features are underdeveloped, perhaps even awkward to use. It will certainly not appeal too much to those looking for bells and whistles. But garish designs are extremely common at this stage in the development of the medium and there are certainly interfaces which are far worse than the one provided with the REP. This is not necessarily a draw back. It still isn't clear what patterns for use will develop for such a work. The current crudeness of the interface allows for experimentation by users as well as the publishers.

The CD-ROM edition of the encyclopedia will be of most use as a supplement for undergraduate courses and for scholars looking to extend their references. Much like the designers of a Quad can either hope that pedestrians follow a preset grid of walkways or put down the grass and then build paths where people walk. The interfaces of the REP allow for many uses, the more popular of which could be more fully and prettily built into future releases of the software. The CD-ROM version of the *Routledge Encyclopedia* adds a great deal of utility to the entire project, not to mention a fair amount of fun. Even at this somewhat early stage, the product was well worth the resources put into its development and, should one's university invest in an edition, well worth the attention of philosophers.

Department of Philosophy
Boston University
745 Commonwealth Avenue
Boston MA, 02215
USA

