

RE-SPECIFYING CRITICAL THINKING, FOR ASSESSMENT: RESULTS OF AN EXPLORATION INTO THE NOTION OF *ASSUMPTION*

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Introduction

Various countries have recently decided to include the testing for critical thinking in their assessments at national or local levels. Colombia is among those countries. In fact, the official tests of higher education in that country – the ECAES tests – are currently being redesigned, and as part of this process it has provisionally been determined by the Colombian Institute for the Promotion of Higher Education (ICFES) and by the Ministry of Education that they should include the assessment of critical thinking. The context, as usual, seems difficult to grasp in all its important issues – with old-academicist as well as neoliberal forces attempting to get a grip on the present and future of higher education. The decisions about what to include in tests at a national level are very likely to have important consequences in the educational system in a country. Assessment at a national level, of course, is much more than just getting to know learning; it is also the opening of a public debate about the ends of formal education, and, want it or not, it is a way of strongly intervening in the educational affairs of universities in the country. Assessment is a political activity, and this characteristic becomes especially salient in a case like this one when tests are administered at a national level.

The testing for critical thinking can be said to have a relatively long history and to have by now achieved some consensus, mainly in the work of the so-called critical thinking movement. Nevertheless, decisions with such a political reach should always be taken as an opportunity to re-examine what is involved in them, as well as their potential effects. Additionally, the continued existence of alternative educational approaches that also attempt to develop criticality in students, should be considered in a serious way. This paper is a part of that attempt to explore the idea of critical thinking in the light of the possibility that it be included in assessment of professionals to be in Colombia. The discussion, nevertheless, does not concentrate on the local conditions in this country, and will hopefully bear some interest for those working in other countries.

In particular, the argument developed in this paper tries to show a serious problem in the dominant approach proposed by the critical thinking movement – mostly based on informal logic – as well as its possible consequences in assessment. The discussion basically centres on the ideas that the dominant notion of critical thinking is mostly formal – and not substantive – and due to this presents the risk of becoming a mercenary or domesticated form of criticality (Heid, 2007), whose ultimate masters may not be those we would want them to be. As such, it might end up being used only at the service of dominant forces in society. This exploration will take place through an examination of the notions of *assumption* and *assumption identification* as they are used in the critical thinking movement. Arguably, however, the same discussion might be extended to other elements involved in the idea of

criticality as formulated within that approach. I will then turn to showing how other approaches that also attempt to promote critical thinking have developed, to a lesser or greater degree, more substantive proposals. Lastly, briefly examining other problems that emerge in substantive approaches, I present a suggestion for critical thinking assessment.

1. Criticality, assumptions, and assessment in the critical thinking movement

1.1 Critical thinking and assessment

In the critical thinking movement, the idea of critical thinking seems to have been mainly associated with the skills and dispositions needed to appropriately use knowledge of logical structures, to assess the soundness of arguments – one’s own as well as others’¹. One of the most influential authors, Robert Ennis, has proposed a definition that reads as follows: “critical thinking is reasonable and reflective thinking that is focused upon deciding what to believe or do” (Norris and Ennis, 1989, p.1; see also Ennis, 1993). This idea is then expressed in terms of appropriately assessing the reasonableness of both statements and actions, by examining how good the reasons that attempt to justify them are. In a similar fashion, the panel of experts gathered by Facione that produced the document known as ‘the Delphi Report’, defined critical thinking as “purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based.” (Facione, 1990, p.2). Expanding on these definitions, these authors further postulate that critical thinking is constituted by a set of skills as well as a set of dispositions. As an illustration, some of the skills in Ennis’ list are *focusing on a question, analysing arguments, judging the credibility of a source, judging inductions, judging deductions, and identifying assumptions*. And some of the dispositions are *seeking reasons, trying to be well-informed, taking into account the total situation, open-mindedness, and seeking precision* (Norris and Ennis, 1989, pp.12 and 14).

These lists of skills and dispositions show us in greater detail what these authors have in mind, and are congruent with the conceptual tools they provide for improving critical thinking. Based on theories of the logic of arguments that specify their elements and the way they are connected to each other when producing a justification, authors in the critical thinking movement study the various ways in which reasoning can go wrong when justifying a conclusion. A critical person, then, would be able to identify the main conclusion in an argument, the reasons proposed in its support, the nature of the connections between them and the conclusion (e.g., deductive, inductive), and the kinds of implicit propositions or assumptions that must also be true so that the reasons legitimately support the conclusion. And then, she would be in a position to judge the soundness of the argument.

There are several well-known tests for critical thinking, widely used in many countries but especially in the United States. Most of them only cover critical thinking skills –and not dispositions– and are constituted by multiple-choice items. Some of the best known ones are the *Watson-Glaser Test*, the *California Critical Thinking Test*, and the *Cornell Critical Thinking*

¹ This is certainly not the only one, given that other approaches not essentially based on theories of (informal) logic have also been advanced; but it has been somewhat dominant. As I will explain it later in this paper, however, my argument will not depend on taking critical thinking as based on informal logic.

Tests (Forms X and Z). Although the modules for most of them receive different names, it can be argued that they all refer to similar types of skills. The skills emphasised in these tests vary, and some of them are more comprehensive than others. According to Ennis' classification, even though there may be many subcategories, they all test for deductive reasoning, inductive reasoning, identification of assumptions, and credibility of sources and observations (see Ennis' annotated list of critical thinking tests, 1999). Interestingly, of these four categories, only questions of deductive reasoning have unequivocal responses (Norris and Ennis, 1989), because the others depend on previous beliefs that the person holds about the topics and contexts involved in the question.

Another test, the *Ennis-Weir Critical Thinking Essay Test*, is notably based on relatively open ended questions, and its authors claim that based on this property it can evaluate some dispositions as well. Apart from this one, arguably there are no other instruments for putting to the test critical thinking dispositions. There are instruments that do attempt to measure dispositions, such as the *California Critical Thinking Disposition Inventory*. Nevertheless, they are not suitable for assessment situations in which those taking the test hold stakes, mainly because of their dependency on the sincerity of the respondent.

1.2 Assumptions and assessment

As mentioned above, I will concentrate on an analysis of *assumptions* as a way of illustrating the main argument in this paper. The ability to identify them seems to be attributed central importance for critical thinking, but furthermore it is arguably part of the modes of analysis proposed by other alternative approaches that also attempt to promote the development of critical persons as an aim of education. In a general and rough way, assumptions in the critical thinking movement are taken to be propositions that are left unstated, but that are relevant to the argument being evaluated in such a way that if the assumption turns out to be false, then the argument loses consistency and is weakened (Fisher, 2001). This idea that assumptions are not explicit suits well the popular conception of criticality according to which it refers to the ability to bring to light aspects that somehow were hidden from view; and that usually pass unnoticed. The expressions for a number of actions associated to criticality attest to this: reading between the lines, unveiling, going beyond superficial meanings, etc. In most cases one can find that authors in the critical thinking movement refer to assumptions in an explicit way, and take it as a central element of critical analysis (see for instance Norris and Ennis, 1989; Thomson, 1996; Fisher, 2001; Paul, 2006), whereas in others they can be associated with other elements that their proposed analysis is about. (For instance, in Toulmin's model of an argument the warrants – what has to be true if the grounds can legitimately constitute reasons for the conclusion – will in many cases be left implicit, and therefore will effectively be assumptions in an argument; see Toulmin, Rieke and Janik, 1979; also Toulmin, 1958.) Arguably, a similar conclusion can be drawn concerning other approaches such as Walton's (1989).

An example of an assumption identification question, from the Watson-Glaser Test, is the following:

“I'm travelling to South America. I want to be sure that I do not get typhoid fever, so I shall go to my physician and get vaccinated against typhoid fever before I begin my trip.”

Proposed assumption:

28. Typhoid fever is more common in South America than it is where I live.

MADE or NOT MADE?

The correct answer would be “MADE”.

Now, how can someone identify assumptions? This is, of course, a difficult question. Arguably, most authors of critical thinking texts tend to provide examples of assumptions implicit in various sample arguments, and then suppose that from that point on, the readers will be able to do it by themselves. A few additional criteria are sometimes included, such as Fisher’s (2001, p.125):

In short, the general strategy is that we should attribute to arguments/explanations and so on those assumptions which:

- (a) seem likely in the context (...), or
- (b) which make sense of what is said, or
- (c) which seem necessary to make the reasoning as strong as possible (if true).

These guidelines cannot, of course, be taken as an algorithm that, if followed, will lead us to a correct identification of assumptions. As Norris and Ennis (1989), and Fisher (2001), have remarked, a critical person’s pointing out of the most likely assumptions being made in an argument or explanation depends on her/his background beliefs². Ennis’ example is illustrative: “Since Mike is a dog, Mike is an animal” (1982). So, what is being assumed in this argument? The perhaps most likely answer to that question is “it is being assumed that all dogs are animals”. But, as Ennis has argued, there are always other possibilities, such as “all dogs whose name starts with an ‘M’ are animals”. Both of them (and countless others) are logically possible as assumptions, and therefore the question postulated above cannot be answered in a univocal way. Or, in other words, *logical necessity* would be insufficient as a criterion for determining the needed assumptions in any real-life argument (Ennis, 1982). There is some debate about this topic, though. Plumer (1999), for instance, in the context of the discussion about the possibility of assessing assumption identification in critical thinking tests, has argued that logical necessity can still be kept as the criterion if one takes into account the specific context in which the argument was uttered. That is, the level of specificity of the context and of the argument will determine the specificity of the assumptions that are logically necessary. Plumer’s argument additionally sets to reduce the range of possible correct assumptions that a person answering such a question could correctly provide, by distinguishing those ones needed by the *elements* of the argument, from those others needed by the argument *as a whole*. In the example, “dogs can have names” is an assumption of one argument element, whereas “all dogs are animals” is a whole-argument assumption. For Plumer, if the instructions are precise about the question being about whole-argument assumptions and not about presuppositions of the argument elements, then “dogs can have names” can be discarded. The choices between assumptions presented in this discussion involve classes and subclasses of the elements referred to in the premiss – such as dogs, and dogs whose name start with an “M”. This, at least in part, would seem to suggest that there is actually a choice to be made; that some options are simply more correct than others. But then, at the same time it obscures the issue of whether various ways of constructing assumptions that are *radically* different between them – i.e., focusing on radically different topics and issues – can all simultaneously be logically correctly identified. To that I turn in the following section.

² Two clarifications. First, Ennis has insisted on the idea that this is not exclusive of assumption identification, and that it also occurs in inference evaluation (Ennis, 1993; Norris and Ennis, 1989). And second, I will be referring to *needed assumptions* —or assumptions of the argument— and not to *made assumptions* —or assumptions of the arguer (see Ennis, 1982).

2. The meaningfulness of identifying an assumption depends on contexts of meaning that the critical person can relate to

My argument strategy will now be to explore the possibility of constructing, in a formal way, the conditions to construct the assumptions needed in an argument. One can, as maybe Plumer would have it, distinguish different kinds of assumptions; at least, those of the elements and those of the argument as a whole. From this distinction one would therefore perhaps include different forms of their identification in one's procedures for critically analysing an argument, or in a critical thinking test. One might even be able to formulate a generic but comprehensive list of all the formal assumptions that might appear in an argument. This way, for instance, for the argument

Ar1. A, therefore B.

some of these *generic assumptions* could be the following³:

- As1. It is possible that A. (This is a presupposition of the element 'A'.)
- As2. It is possible that B. (This is a presupposition of the element 'B'.)
- As3. If A, then B. (This is a familiar way of specifying the assumption made in the argument as a whole, or the warrant in Toulmin's model.)
- As4. It is relevant whether B. (This is a pragmatic assumption.)

There may well be other assumptions; but this short list gives us something to begin with.

These four expressions are rather abstract, though. What do they mean? If criticality is not to be a purely algorithmic process, but in some sense human, the critical person must be able to understand these sentences that represent the generic assumptions in the argument. The mere formulation of As1 through As4 for a particular argument cannot be in itself a sign for critical thinking. Now, a holistic approach to meaning – that I endorse here – would suggest that knowing the meaning of a sentence S implies knowing many other related sentences as well as whether they would be true if S is true. These related sentences include descriptions of implications and consequences, explanations, justification of actions, and so on (Mejía, 2001). It can be further argued that as a consequence of rejecting the analytic-synthetic distinction (Quine, 1953), there is no single *particular* related sentence that the critical person must necessarily know in this sense described above; but she should know many.

For Ennis' argument

Ar2. Mike is a dog, therefore Mike is an animal.

the list of generic assumptions would translate into

- As5. It is possible that Mike is a dog.
- As6. It is possible that Mike is an animal.
- As7. If Mike is a dog, then Mike is an animal.
- As8. It is relevant whether Mike is an animal.

³ This one does not intend to be a comprehensive list. For one thing, assumptions as missing-premises (see Ennis, 1982) are not represented here.

We have already seen some ways in which we can specify other sentences related to those in the list. "Dogs can have names" would be directly related to As5, and so would be "there are dogs". As7 is the assumption that Ennis' and Plumer's arguments originate from – because both all dogs being animals, and all dogs whose name starts with an "M" being animals, will very strongly support it. The holistic position suggests that such related sentences as "dogs can have names" and "all dogs are animals" effectively point at the ways in which we may be understanding the meanings of As5 and As7, respectively; that is, at the ways in which we make them meaningful. But let us notice that we are also at the same time describing *in just what sense* we would be willing to endorse, reject, or perhaps doubt them. And here we can return to the discussion in the previous section. Why would we normally identify "all dogs are animals", and not "all dogs whose name starts with an 'M' are animals", as an assumption needed by the argument? My tentative answer is this: Because it simply does not occur to us in a reasonable way just how an individual's name initial might be relevant for the determination of its biological taxonomy. But then, as Ennis had anticipated, this all depends on our beliefs about the world. In this example, there is so much common ground between us all, and we have so much certainty about what is involved, that it is difficult to envisage alternatives that in some way can be genuinely meaningful to us.

But one can hardly think that criticality is, even if only partially, about identifying such assumptions in arguments in which there is so much common ground and so little to be uncertain about. So let us now move on to a different example. Let us suppose that the argument in question is

Ar3. Saddam Hussein was responsible for the murder of thousands of Kurds in northern Iraq; therefore he deserved to be executed himself.

The four generic assumptions As1 through As4 would now become

As9. It is possible that Saddam Hussein was responsible for the murders of thousands of Kurds in northern Iraq.

As10. It is possible that Saddam Hussein deserved to be executed himself.

As11. If Saddam Hussein was responsible for the murders of thousands of Kurds in northern Iraq, then he deserved to be executed himself.

As12. It is relevant whether Saddam Hussein deserved to be executed himself.

What do these sentences mean? For instance, in what sense could someone endorse, reject, or doubt As10; that is, that it is possible that Saddam Hussein deserved to be executed himself? Let me now try to spell out a few possibilities from perspectives that might reasonably be meaningful to someone, and in which the assumption might be denied⁴:

CM1. Saddam Hussein was a divine ruler, and divine rulers always act in accordance with God's infallible will. They cannot possibly deserve punishments of any kind.

CM2. The idea of executing is not compatible with the idea of deserving, due to the fact that an execution destroys the person who does or does not deserve the punishment. Nobody could possibly deserve to be killed.

⁴ It is perhaps easier for the critical person, although not necessary, to meaningfully identify assumptions in an argument when she wants to reject them rather than accept them. And that is why I constructed these examples this way: imagining contexts of meaning in which someone might want to criticise the assumptions.

CM3. The whole idea of “deserving” does not make sense, and is just an expression rhetorically used to legitimise and gain support for certain decisions that only serve the purpose of having societies under control. In that sense, nobody deserves anything; or, better, nobody could in principle deserve anything. Punishments must only be seen as political devices for control.

From the contexts of meaning suggested by CM1 through CM3, three ways of expressing As10 meaningfully could be, respectively,

As10.1. It is being assumed that Saddam Hussein was not a divine ruler, or that even divine rulers can deserve punishments such as an execution, or both.

As10.2. It is being assumed that even punishments that destroy the person can be deserved.

As10.3. It is being assumed that there is something to the nature of punishments that goes beyond their purely political role in controlling society.

It would be too weird to say that these three are the same assumption; they are not, even if they are all associated to the same generic one, namely As10: that it is possible that Saddam Hussein deserved to be executed himself. The three perspectives were ways of trying to specify in just what *sense* As10 could be understood; that is, *to give it some meaning*. To summarise the conclusion, unless there is a web of beliefs that constitute a context of meaning that can accommodate the idea that the assumption is, may be, or is not, true, *that assumption will remain meaningless*. And even if we talk of assumptions as being *of* some object of critique – some form of knowledge – they can actually only emerge in the relation between that form of knowledge and the critical interpreter’s contexts of meaning.

I take it that it is in this sense that Rorty has commented on the attempt by feminists to create a language in which we hear “what women as women have to say” (1991, p.203):

Assumptions become visible as assumptions only if we can make the contradictories of those assumptions sound plausible. So injustices may not be perceived as injustices, even by those who suffer them, until somebody invents a previously unplayed role. Only if somebody has a dream, and a voice to describe that dream, does what looked like nature begin to look like culture, what looked like fate begin to look like a moral abomination. For until then only the language of the oppressor is available, and most oppressors have had the wit to teach the oppressed a language in which the oppressed will sound crazy – even to themselves – if they describe themselves as oppressed.

I have provided three examples of perspectives in which it could conceivably be thought that As10 could be false. (The same analysis, with analogue examples, can be made concerning the other assumptions As9, As11 and As12.) But, as can be guessed, the possibilities are *countless*. And they are countless in at least two different senses. The first one relates to the idea that there is an infinite number of possible assumptions that can be constructed as ways of giving meaning to any one of the generic assumptions. The second one is perhaps more interesting, even if it sounds more trivial: *one cannot count them because one cannot possibly know them*. In order to formulate some of them, one would have to know, and to conceive, of possible contexts of meaning that have not yet been known or conceived by oneself, and perhaps even by anyone. In other words, they are not part of one’s culture; not even of the potential extensions of one’s culture in the short term. Those possibilities will not occur to the critical person simply by asking herself the question “what assumptions are being made in this argument?”

3. Assumptions in other approaches to criticality: alternative elements of analysis

As mentioned before, the proposal of the critical thinking movement with its approach based on informal logic is but one of many proposals for understanding what criticality means and how it could be pursued in education. In this section I will briefly present other approaches and the way their proposed forms of critical analysis take the idea of 'assumptions'.

Critical –or radical– pedagogues (Freire, 1970, McLaren and Kinchloe, 2007) take education to be instrumental in either sustaining oppressive relations in society that negatively affect the possibilities of improving the human condition, or mobilising people against them. The development of a critical consciousness would be a first. In education, they do not talk so much of “critical thinking”, and instead some of them mainly attempt to promote the development of *critical consciousness* in students. The definition of this idea of critical consciousness has arguably been rather vague, with changes of emphasis throughout the years and books and articles devoted to the general formulation of critical pedagogy. Early proposals by Freire take it that it implies a deep and holistic understanding of reality, which includes an understanding of the structural causes of oppression, as well as a dialogical attitude of openness and a will to revise one’s knowledge (see Freire, 1970 and 1973). More recent formulations attempt to acknowledge a Foucaultian view of the relation between power and knowledge, and seem to suggest that students must learn to analyse the discourses and power/knowledge relationships which shape their own and others’ identities and behaviours. A relation with some critical strands of *cultural studies*, when seen in the context of education, is clear (see Giroux, 1994 and 2000). In any case, in all its various guises and colours, critical pedagogues focus strongly on the relations between forms of knowledge (theories, justification for social practices and institutions, discourses, arguments, etc.) and the social reality in which they appear and are enacted. By doing so, the critical analyses they expect students to perform are ones that will connect the object of study with society: making explicit hidden or implicit conceptions or assumptions about the general order of society, about the identities of people belonging to various social groups, about who has legitimate authority to perform certain actions, and so on. Such analyses usually take on issues of class, gender, race, sexual orientation, and other common categories that define social groups. By telling us what sorts of assumptions to pay attention to, and by creating a base or canon of social analyses in the literature, they are telling us what issues are taken to be existentially and politically relevant in our present day societies. The theorisations concerning the relations between politics and education, and between power and knowledge, do draw our attention to particular aspects to look at when carrying out some critical analysis of some form of knowledge. However, it is mostly in the move from the abstract terms of those theorisations to the concrete analyses of our present day societies, where critical pedagogues bring contents into their promoted forms of criticality.

It is worth mentioning that in reaction to certain critical pedagogy tenets, some authors have proposed what somewhere have been termed *post-radical pedagogies*. In spite of their apparent opposition to critical pedagogy, they can be argued to also attempt to promote in education a certain kind of awareness in students of what is hidden in cultural texts, discourses, and social practices. This awareness may not necessarily have to be oriented towards liberation from whatever meanings are being *imposed*, or towards ideals of emancipation from oppression and the attainment of autonomy. Instead, or also, to the

enabling of the person's capacities to construct new meanings of her own by means of the production of cultural objects (Buckingham, 1998). But, at least in this sense of becoming aware of something that is not immediately visible in discourse, approaches like those of the post-radical pedagogies that are based on poststructuralist and postmodernist approaches – such as deconstruction and genealogy – can arguably still be considered to be guided by a critical intent. And here, again, it is the move from abstract theory to the –deliberate or not– creation of a canon of social and cultural analyses, that mostly shows the kinds of commitments these approaches are taking and expecting students to take.

Another approach, the rather unknown one called *critical systems heuristics*, promotes the education of critical citizens who can identify and question what are termed the *boundary judgements* of social system designs (Ulrich, 1987). These boundary judgements refer to ideas both about what is and about what ought to be, that inevitably flow into the design of any social system. According to the theory they are necessarily arbitrary, and no expert can claim to be more knowledgeable than any layperson –any citizen. For this reason, citizens can and should participate in public debates about social systems in equal conditions as the experts (in planning, economics, education, health, etc.), at least about those issues that concern boundary judgements (see Ulrich, 1987 and 2000). From a Kantian practical philosophy, these are said to be of twelve types, namely the clients (beneficiaries) of the system in question, its purpose, its measure of success (or improvement), its decision takers, its components (resources and constraints), its environment, its designer, the nature of the expertise associated to it, its guarantor, its witnesses (representing the concerns of the citizens that will or might be affected by its design), the chance of emancipation the affected have from the premises and promises of the involved, and, finally, its world-views (Ulrich, 1987). Boundary judgements can effectively be said to be assumptions, because they take the role of missing elements in a hypothetical argument that attempted to justify particular designs of social systems. In this sense one might imagine the conversation as follows:

- Why should this social system be implemented with this particular design?
- Because *these* should be its clients, and *this* its purpose, and *this* its measure of success (etc.)

4. Formal and substantive ways of approaching criticality

As just seen, and contrary to the categories of analysis proposed by informal logic and the critical thinking movement, those of critical systems heuristics and critical and post-radical pedagogies do specify aspects of content that need to be paid attention. In this sense, whereas the proposal by the critical thinking movement based on informal logic can be considered *formal* –insofar as it does not go beyond the form of the arguments– those of the other approaches can be considered to a lesser or greater extent, *substantive*. Substantive approaches, then, draw on knowledge from disciplines such as sociology, systems theory, and political theory, and by doing so they are effectively providing contexts of meaning from which critical analyses can be carried out. It is within these contexts of meaning that categories such as beneficiaries, interests, oppressive relations, gender, and so on make sense. And for this reason also, those approaches are already committing to particular positions concerning society, and are thus already entering the conversation about what to believe or do, even if only in a relatively harmless way. Of course, the categories of analysis do not close the door to the use of creativity, but they do guide the efforts of the critical person concerning what it is important to look at. There are differences between the approaches in

this respect, though; and critical systems heuristics may be more open than critical and post-radical pedagogies. When the critical systems heuristics practitioner asks who the clients of some particular social system are, it is not being explicitly told to her that she should consider as a possibility, categories of class, gender, race, or sexual orientation. In principle, she might instead focus on different kinds of variables, and the former might even never cross her/his mind –not even to reject them as irrelevant after some analysis. However, as authors in those other approaches like critical and post-radical pedagogies constantly produce analyses of society, they have effectively created a base of knowledge that –deliberately or not– guides their novice apprentices in a much clearer way, to learn what is considered important in society to pay attention to. In this sense, critical systems heuristics can be seen as half-way between the formal approach of the critical thinking movement, and the more substantive approaches of critical and post-radical pedagogies.

Now, one can wonder, are these assumptions revealed by means of analysis based on critical pedagogy, post-radical pedagogies, critical systems heuristics, and other approaches not examined here, of the same kind as those proposed by authors who rely on informal logic in the critical thinking movement? Or do they refer to different kinds of objects? And, in this sense only, are all these kinds of critical analysis compatible? My contention is that regardless of the radical differences in the literature about all these critical approaches in respect of that of the critical thinking movement, logical analysis is unavoidable in all of them. This is so at least in a somewhat mild sense: when the critical person tries to unveil the general discourses underlying some form of knowledge (with its power/knowledge configurations), or when she tries to make explicit the general conceptions of social order and social groups behind an argument or social practice, and so on, she has to figure out what kinds of ideas need to be endorsed for it to be at least to a certain extent *consistent*, so that it can be taken as reasonably plausible to be adopted by some one. But then, consistency is to a great extent *logical consistency*. That is, we judge that there is consistency when we see that some ideas follow from others, fit together, and so on; but following from others and fitting together are logical properties. Adopting a Davidsonian perspective on the relation between truth, meaning and interpretation (see Davidson, 1984), if the ideas one ascribes to some perspective seem to largely have no logical bonds between them, to be mostly (logically) contradictory, then chances are that we are not interpreting that perspective in a correct manner. To summarise: whenever one tries to find out what is being assumed in a form of knowledge, one unavoidably has to pass one's candidates for those assumptions through a test of logical consistency with the rest of ideas that constitute that form of knowledge in question. And that is exactly what is done in the proposal of the critical thinking movement⁵.

All this means that the assumption analyses in the other critical approaches are compatible with that proposed by the critical thinking movement. Moreover, the assumptions made explicit in the former can be seen as instances of what one can *in principle* arrive at as a result of following the recommendations of the latter. But then, does this mean that following any of these approaches will yield the same results, that their differences are basically superficial, and that it does not matter which one one takes? Clearly not. Let us recall a conclusion from the discussion in section 2: even if there might be a limited number of generic assumptions, there are countless genuinely different ways in which they can be made meaningful. But then, some approaches such as critical and post-radical pedagogies explicitly draw the critical person's attention to particular aspects that it may be relevant to look at when

⁵ Let us recall that assumptions are taken as propositions that an argument needs in order to be consistent and therefore more solid.

disclosing assumptions in a form of knowledge, or more generally when carrying out a critical analysis of it. But others do not, as in the case of the critical thinking movement. And if they do not, then it is possible that those aspects may not even occur to the critical person as something worth looking at. That is, for example, even if somebody trained in the techniques of the critical thinking movement may possibly reach conclusions about assumptions concerning forms of oppression and injustice in society as part of her analysis of some form of knowledge, she will not necessarily do so.

5. Reflections on the assessment of critical thinking

There are obvious difficulties with the construction of tests for the assessment of critical thinking, especially when it is to be carried out at a national level on students who are nearing their graduation as professionals. Nevertheless, most of those difficulties that have been discussed so far are of a technical nature. As a consequence, the debate has in many cases lacked a concern for the engagement of normative and political issues. Decisions concerning what is relevant in our societies for critical persons to pay attention to when examining forms of knowledge of any kind, are, of course, essentially normative and political. Now, one might choose to adopt a formal approach to criticality – for instance by promoting the development of general thinking abilities – in order to avoid having to decide on issues of what contexts of meaning will be given prevalence⁶. Here, two different situations come to my mind that can occur: in the first one, no contexts of meaning are specified as prevalent, and the items attempt to be as culturally and politically neutral as possible, by means of relying on common grounds and largely unproblematic issues for their analysis. Arguably, this is the case of current critical thinking tests constituted by multiple-choice questions, such as those mentioned in section 2. Nevertheless, on the one hand it can be shown that, unless the items involve only purely abstract terms⁷, there will still be a decision regarding which topics are treated, and consequently an implicit message about the purposes of critical thinking. That means that, effectively, some contexts of meaning will be given prevalence, but will not be made explicit. And on the other hand, as already argued, performance on the examination of the sorts of complex issues that critical thinking is presumably more urgently called for, will not be assessed. In a second type of situation, such complex issues are used, but no contexts of meaning are privileged as the ones that critical analysis should be carried out from. Here, the critical person taking the test will only be able to do that analysis from the contexts of meaning that she is able to conceive; that is, those that come handy at the moment of reacting in the presence of forms of knowledge, in the midst of the flow of living. But that “selection” of contexts of meaning will depend on various cultural and social forces that have shaped and are constantly shaping her identity, as well as on the knowledge resources she has. And nothing guarantees that those forces will act in a direction in which the most relevant contexts of meaning for our societies are actually reflected on and used for critical thinking. Therefore, if left alone, students may end up becoming users of the conceptual tools of critical analysis, only to put them at the service of dominant forces in society. That would indeed be a mercenary form of criticality⁸.

⁶ The very idea of criticality as something that is possible and at the same time desirable is, on its own, a commitment to a certain political position. And hence, there already are privileged contexts of meaning. My discussion, however, occurs within that framework.

⁷ Many items on the Cornell Critical Thinking Test have this abstract quality.

⁸ Paul (1994) has argued against what he calls the sociocentrism and the egocentrism that, for him, are not avoided by the mainstream approach of the critical thinking movement. However, even if sociocentrism and

Adopting substantive approaches to criticality is not unproblematic either. On the one hand, any one such approach presupposes a number of commitments to particular normative positions about both individuals and society. Assessment would be unjust with those who do not share those positions, for good reasons, as well as more generally anti-democratic. And on the other hand, the contexts of meaning given prevalence may certainly not be comprehensive. If criticality is also about seeing what no one has been able to see in an old form of knowledge, then substantive approaches will always be in risk of reducing the possibilities of critical analysis by promoting only their own ways and cutting off new ones.

There is no easy solution here, for a genuine dilemma has emerged. One possibility, however, is to adopt both formal and substantive approaches, even if they cannot be integrated into a fully coherent single framework that can work as the general foundation for a critical thinking test. This means declaring the contexts of meaning that are deemed relevant in our society today – that is, making explicit the substantive part of the critical approaches adopted – and that are expected to be used by those taking the tests. (I will call these, “privileged contexts of meaning”.) While some public debate is necessary about what substantive content will be used, I will advance the idea that in a country like Colombia the privileged contexts of meaning should be ones that take as relevant conceptions of gender, race, and sexual orientation, of the distribution of wealth and access to social and cultural goods, of violence and its legitimacy, and of the responsibility of citizens in the dimension of the public, among others⁹. However, the possibility that people taking the tests also use other contexts of meaning that can extend beyond the privileged ones referred to above, should be allowed for and, moreover, actively promoted. This way, it would be expected that critical persons be able to explore forms of knowledge in a way that pays attention to important issues in our society, while at the same time that they also be able to develop their own ways of thinking, making connections in a way that is also critical, but in some sense freer. Additionally, it is worth saying that the use of complex issues is necessary, for otherwise the type of thinking assessed will fall short of being genuinely critical¹⁰. There could be various ways of implementing this idea. One is to provide students taking the test with forms of knowledge (an argument, a description and justification of a social practice or institution, a theory, etc.), so that they produce a critical analysis of it. Their responses can then be assessed using both substantive and formal criteria, giving credit to critical use of the privileged contexts of meaning, but also to that of alternative ones.

It is important to say that one risk that has not been avoided in this solution is that of knowledge imposition on those who may have reasons to consider incorrect, or perhaps even irrelevant, the privileged contexts of meaning. But then, a commitment to certain ideas about what is important in society should not be avoided, even if the price to be paid is some form of knowledge imposition. And ways of minimising –but not completely avoiding– this effect by attempting to recognise such cases can and should be developed.

6. Final remarks

egocentrism can be avoided in some way, the mercenary form of critical thinking that I describe here could still occur.

⁹ It is beyond the scope of this paper to argue this position, which I only present here as an illustration.

¹⁰ The technical difficulties involved in assessment using complex issues are great. However, the ICFES, the organisation in charge of constructing and administering the ECAES

In this paper I have tried to show that the adoption of formal approaches to criticality – such as the one proposed by the critical thinking movement – carries with it an important risk of ending up with a mercenary form of critical thinking that is put at the service of dominant social, economic or cultural forces – thus losing the radical character of critique. And in this sense it is insufficient. I have not advanced a new theoretical proposal, but instead I have argued that both formal and substantive criteria need to be taken into account when assessing critical thinking in students. But then, of course, this discussion can be extended beyond the domain of assessment, into that of the teaching of critical thinking.

There is an important limitation in my analysis that has to be acknowledged. So far I have only considered criticality in relation to the analysis of forms of knowledge by themselves, but not in relation to the processes by means of which they were constructed. And this is an important part of critical thinking indeed. That is, a critical person would not only be able to critically examine a form of knowledge, but also the way in which it came to be. This is important for at least two reasons: firstly, the validity of some forms of knowledge is more an issue of legitimacy than of truth; and secondly, questions regarding what points of view were included in their construction of some form of knowledge, whose voices had a genuine input and whose voices were excluded, and so on, can also tell us something about whether certain aspects or dimensions of the situation may have inappropriately been left out of consideration. Further work should tackle this matter and its implications for assessment.

7. References

- Buckingham, D. (ed.) (1998). *Teaching Popular Culture: Beyond Radical Pedagogy*. UCL
- Davidson, D. (1984). *Inquiries into Truth and Interpretation*. Clarendon.
- Ennis, R. (1982). Identifying implicit assumptions. *Synthese*, 51, 61-86.
- Ennis, R. (1993). Critical thinking assessment. *Theory into Practice*, 32 (3), 179-186.
- Ennis, R. (1999). An annotated list of critical thinking tests. Available online at <http://www.criticalthinking.net/CTTestList1199.html> [August, 1999]
- Facione, P. (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction: Executive Summary*. California Academic Press. Available online at
- Fisher, R. (2001). *Critical Thinking: An Introduction*. Cambridge University Press.
- Freire, P. (1970). *Pedagogy of the Oppressed*. Seabury.
- Freire, P. (1973). *Education for Critical Consciousness*. Seabury.
- Giroux, H. (ed.) (1994). *Between Borders: Pedagogy and the Politics of Cultural Studies*. Continuum.
- Giroux, H. (2000). *Impure Acts: The Practical Politics of Cultural Studies*. Routledge.
- Heid, H. (2007). The domestication of critique: Problems of justifying the critical in the contexts of educationally relevant thought and action. In F. Heyting and C. Winch (eds.), *Conformism and Critique in Liberal Society*, Blackwell.
- Mejía, A. (2001). Reconstruction in criticality: A discussion on questions, assumptions, and interpretation. *Inquiry: Critical Thinking across the Disciplines*, XXI (1), 17-31.
- Norris, S. and Ennis, R. (1989). *Evaluating Critical Thinking*. Midwest Publications.
- Paul, R. (2006). *Critical Thinking Reading and Writing Test: How to Assess Close Reading and Substantive Writing*. Foundation for Critical Thinking.
- Plumer, G. (1999). *On Testing for Assumption Recognition*. Law School Admission Council. Available online at <http://www.lsacnet.org/Research/Testing-for-Assumption-Recognition.pdf>
- Quine, W. (1953). Two dogmas of empiricism. In *From a Logical Point of View: Nine Logico-Philosophical Essays*. Cambridge: Harvard University Press.

- Rorty, R. (1991). Feminism and pragmatism. In *Truth and Progress: Philosophical Papers, Volume III*. Cambridge University Press, 1998.
- Toulmin, S. (1958). *The Uses of Argument*. Cambridge University Press.
- Toulmin, S., Rieke, R., and Janik, A. (1984). *An Introduction to Reasoning* (2nd edition). Macmillan, 1st edition 1979.
- Ulrich, W. (1987). Critical heuristics of social systems design. In R. Flood and M. Jackson (eds.), *Critical Systems Thinking: Directed Readings*. Wiley.
- Ulrich, W. (2000). Reflective practice in the civil society: The contribution of critically systemic thinking. *Reflective Practice*, 1(2), 247-268.