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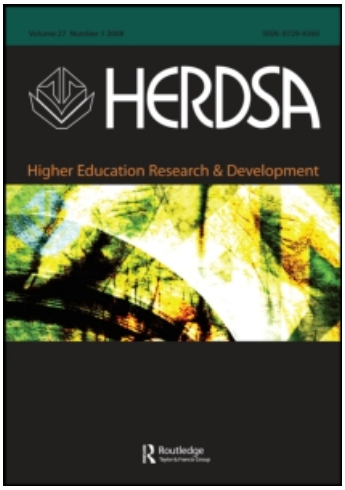

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An 'infusion' approach to critical thinking: Moore on the critical thinking debate

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This paper argues that general skills and the varieties of subject-specific discourse are both important for teaching, learning and practising critical thinking. The former is important because it outlines the principles of good reasoning *simpliciter* (what constitutes sound reasoning patterns, invalid inferences, and so on). The latter is important because it outlines how the general principles are used and deployed in the service of 'academic tribes'. Because critical thinking skills are—in part, at least—general skills, they can be applied to all disciplines and subject-matter indiscriminately. General skills can help us assess reasoning independently of the vagaries of the linguistic discourse we express arguments in. The paper looks at the debate between the 'specifists'—those who stress the importance of critical thinking understood as a subject-specific discourse—and the 'generalists'—those that stress the importance of critical thinking understood independently of disciplinary context. The paper suggests that the 'debate' between the specifists and the generalists amounts to a fallacy of the false alternative, and presents a combinatory-'infusion' approach to critical thinking.

Introduction

Tim Moore's recent paper on the critical thinking debate between the 'generalists' and the 'specifists' is a timely piece, especially given the moves to introduce graduate skill assessment tests that incorporate 'critical thinking' (Moore, 2004). This paper argues that, while cautious and provisional in his approach, Moore ultimately sides with the specifists. The paper claims that there is more to the case for the generalist than Moore suggests. However, unlike Moore, I am not intending to *adjudicate* between the rival positions, but to suggest that they are complementary and alternative means to understanding 'critical thinking'.

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The generalists and the specifists

The 'generalists' are described by Moore as those for whom critical thinking is a universal, general skill. The 'specifists' are those for whom critical thinking 'is best conceived of as only a loose category taking in diverse modes of thought' (Moore, 2004, p. 4). Moore cites Robert Ennis (Ennis, 1985, 1987, 1992, 1997) as a defender of the former position and John McPeck as a defender of the latter position (McPeck, 1981, 1990, 1992). As we shall see, on balance, Moore sides with McPeck and argues for the importance of subject-specific skills and a genre-specific approach to critical thinking.

The generalist–specifist fallacy

Moore's argument—indeed, the whole 'debate' between the generalists and the specifists—involves a *fallacy of the false alternative*. This is not a new response to the debate. In fact, it has already been mentioned in relation to McPeck's account—on which Moore relies (Quinn, 1994). In Moore's case, the fallacy can be seen in a revealing passage:

> [D]espite the importance attached to the skill of critical thinking, and despite assurances by many universities that it is imparted to students as a matter of course, a number of unresolved questions remain. Central to these is the issue of *whether critical thinking is in fact a universal 'generic skill' able to be applied invariably to the situation at hand, or whether it is best conceived as only a loose category taking in diverse modes of thought.* And related to this conceptual issue is a central pedagogical question: *is it best for our undergraduate students to be taught about critical thinking as a subject of study in itself, or should it be handled within the context of students' study in the disciplines?* (Moore, 2004, p. 4, italics added)

Moore wants us to accept here that critical thinking should be *either* thought of as a universal 'generic' skill *or* a 'loose category taking in diverse modes of thought'—that is, a subject-specific category, *but not both*. He does seem to be opting for an 'exclusive' sense of 'or' regarding the generalist and specifist debate. In parallel, he wishes us to accept that students should be *either* taught about critical thinking 'as a subject of study in itself', *or* through disciplinary studies, *but not both*. We can see that this is so, because in the article alternative positions are not offered; combined approaches are not raised as worth considering. This false dilemma is similar, note, to other fallacies, such as:

> Either we increase military support to El Salvador or we cut off funds altogether. Therefore we must choose between caving in to communism and supporting a brutal tyranny.

There is plenty of support for the idea that critical thinking should be seen *both* as a general skill *and* as diverse modes of thought that are particular to the disciplines concerned. This 'infusion' approach has been adopted elsewhere (Ennis, 1987; Swartz & Perkins, 1989; Swartz & Parks, 1994; Melville Jones, 1999; Ikuenobe, 2001; Reed & Kromrey, 2001).

Ikuenobe, for example, argues persuasively for a position where the generalist approach can be combined with the requirements of specific contexts in a 'developmental' approach to teaching critical reasoning. On Ikuenobe's view, context-free

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Table 1. Ikuenobe's (2001) developmental approach to teaching critical thinking

● Can understand concepts of argument, premise, conclusion, propositions (statements) ● Can identify statements from non-statements, and isolate premises and conclusions ● Can distinguish argument from exposition, explanation, opinion, etc. ● Can construct a discourse that categorizes the above
● Explain concept of 'inference' and evidence ● Understand and can articulate the basic principles of reasoning in terms of justification and the notion of inferential or evidential link ● Understand concepts of truth and validity, soundness and fallacy ● Can identify fallacies in inferences and explain why they are fallacious ● Can construct valid and fallacious inferences and can reflect on own arguments and avoid fallacies
● Can understand and explain different kinds of evidential and inferential relationships ● Can identify these relationships in different texts ● Can construct arguments in which they make relationships based on standard forms in decisions, actions, writing and speaking ● Can identify and construct *modus ponens*, disjunctive and hypothetical syllogisms, statistical and inductive generalisations
● Can identify the different argument structures and their forms ● Can articulate or explain the principles underlying each of the argument structure types ● Can analyse the argument types using truth tables and/or Venn diagrams

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principles of informal logic are 'necessary but not sufficient' for critical thinking (Ikuenobe, 2001, p. 20). Ikuenobe makes the plausible point that an entirely context-dependent 'specifist' view of critical thinking is 'unsatisfactory'. While it is true that the notion of what constitutes an acceptable premise and conclusion is discipline-specific, 'it is necessary to have an objective set of rational standards that can be rationally agreed on to unpack the notion of "reasonable inference"' (Ikuenobe, 2001, p. 24). His 'developmental' procedure can be represented as a series of five stages (Table 1).

It is only at the fifth level—not specified in the table owing to its discipline-specific nature—that general principles are applied to specific disciplinary contexts. Below this level, general principles of critical reasoning are studied. This kind of model is surely more intuitively reasonable—and arguably more pedagogically sound—than a model that is entirely 'specifist' or 'generalist' in its approach.

Moreover, there is compelling evidence that an approach that 'infuses' general critical thinking skills into the context of a discipline—a 'partial treatment' approach—results in measurably better performance than a 'no treatment' approach, but not better performance than a 'full treatment' approach (i.e. a generalist critical thinking

approach in the guise of informal logic classes). Solon has noted, in two separate studies, a substantial rise in critical thinking competence as measured in a Cornell *Z*-test after a study comparing pre- and post-tests of three groups of students: one receiving only general critical thinking instruction (the full-treatment group); another receiving critical thinking instruction in the context of psychology classes (the partial treatment group) and a third group—a class in rhetoric—receiving no instruction at all (the no treatment group) (Solon, 2001, 2003).

The full-treatment group had 40 hours of classroom instruction and over 80 hours of homework exercises. Interestingly, this group showed the greatest improvement in critical thinking of the other two groups. The partial treatment group had 10 hours of class time intervention and the control group had none at all. Solon carefully eliminated from the groups individuals who may have had prior experience or training in 'logic' or critical thinking-related subjects (statistics, research methods) or who were involved in debating, investigative journalism or detective work. Solon also subjected the students in the three groups to a battery of tests to ensure that students in the three groups were not too dissimilar in terms of initial abilities. The grade point averages of each group of students were similar (2.79, 2.86 and 2.73 respectively), they performed similarly on an ASSET reading test (for university admission) and there were no noticeable differences in terms of gender or ethnic mix. Crucially, students in each of the groups performed similarly in the pre-test using the Cornell *Z* (Critical thinking group $M = 43.88$; Psychology group, $M = 43.75$; Rhetoric group, $M = 44.13$). The results of the second study are reproduced in Table 2.

Such results are suggestive of the value of an integrated, combinatory 'infusion' approach to teaching generalist skills in the context of the disciplines. They are not an argument for an entirely 'specifist' approach. (Interestingly, the results also offer support to the value of a 'generalist' approach by itself.) The results indicate that the more critical thinking instruction—in terms of general principles infused into subject content—the *greater the benefit* in terms of measurable results. Solon's paper is the first of its kind to attempt a controlled study of this kind, and further work in this area—replicating the study in a variety of disciplinary contexts—would be of great interest.

Recent work in Australia involving first-year undergraduate students at the University of Melbourne over a two-year period (2002–3) involved conducting pre

Table 2. Results comparing critical thinking abilities in mixed classes

	Pre-test Cornell *Z*	Post-test Cornell *Z*	Group contrast	Mean difference	Critical value	Level of significance	Effect size
Critical thinking	43.88	30.32	CT vs Rhetoric	7.05	4.28	Sig $p < 0.05$	$d = 1.19$
$n = 32$	SD: 4.51	SD: 3.67	(post)		6.30	Sig $p < 0.01$	
Psychology	43.75	26.88	CT vs Psych	3.45	3.39	Sig $p < 0.05$	$d = 0.80$
$n = 30$	SD: 5.17	SD: 4.24	(post)				
Rhetoric	44.13	23.27	Psych (post) vs	3.61	3.39	Sig $p < 0.05$	$d = 0.69$
$n = 33$	SD: 5.19	SD: 5.51	Rhetoric (post)				

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and post measures of informal reasoning using a standard measurement tool, the *California critical thinking skills test* (CCTST): (van Gelder *et al.*, 2004). This particular critical thinking course involved the use of computer-supported diagramming techniques to 'map' reasoning visually (see below, 'Revisiting the teaching of critical thinking'). This approach has led to standard deviation gains of 0.83 over the course of a 12-week semester. This is a remarkable result. Clearly, improvements in critical thinking skills can be made by teaching general reasoning skills. It would appear Solon's results are—to some degree at least—generalizable to the Australian context.

I am not suggesting here that general critical thinking skills need be taught in the form of critical thinking or informal logic classes at universities (as is customarily done). Traditionally, teaching syllogistic structures and logical terminology has been seen as dry, overly abstract, irrelevant and impractical. As noted by others, this has been the standard way in which critical thinking has been taught in Australia at undergraduate level (Melville Jones, 1999). It may be that the generalist enterprise has been right in its *aims* but wrong in its pedagogical *methods* to date and that there are better ways to teach critical thinking (see below, 'Revisiting the teaching of critical thinking').

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Critical thinking as a 'form of discourse'

Moore's fallacy is not as explicit—nor as dangerous—as the 'El Salvador' argument, above. I would not want to suggest that it is. But Moore's aim does appear to be to subordinate our understanding of critical thinking as a 'generalist' skill to an understanding of critical thinking as a 'specifist' skill. Moore wants us to see generalist-style critical thinking as itself *a specific form of discourse* (as opposed to a general skill which is universal to the human species that can be taught independently):

> What I want to suggest from the above analysis is that the discourse associated with generalist critical thinking training … may be best thought of as not a *general* discourse at all, but rather a quite *specific* one. (Moore, 2004, p. 13)

To be fair, Moore's language here indicates a degree of tentativeness and cautiousness: 'I want to *suggest* ', '*may* be best thought of …'. The following passage makes his position seem even more cautious:

> I do not wish to suggest that this type of discourse [generic, universal 'critical thinking' models] is not a valid one for our students to learn about, only that it is a mistake to see it as the model for other discursive forms that they will need to engage with, both in their studies, and later in their professional lives … [t]o do so would seem to be pedagogically ill-conceived. (Moore, 2004, p. 13)

There appears to be a tension here. On the one hand, Moore wants to side with the specifists. He does describe the generalist model as 'pedagogically ill-conceived'. On the other hand, he expresses caution in doing so. This ambivalence leads to his articulation of the issue in terms of the false dilemma given earlier. Not seeing this as a fallacy, however, Moore takes a stand and ultimately—though cautiously—sides with the specifists, noting the 'positivist' limitations of the generalist approach, its

'restrictiveness', and its dangers in terms of limiting the possibility of dialogue and 'other types of knowledge':

> [A]s I have been arguing in this paper there would seem to be a danger in conceiving of critical thinking in the essentially positivist terms of this [generalist] approach; that is, by drawing on a number of general critical thinking heuristics, we can arrive at definitive and final judgements about the rightness and wrongness of propositions, about the correctness and incorrectness of solutions, and about the validity or lack thereof of ideas. … [T]his is a far too restrictive notion of critical thinking practices, one that has the potential to limit the possibility of dialogue and to close down the possibilities of other types of knowledge and critique. (Moore, 2004, p. 13)

It seems fair, in the final analysis, to see Moore's position as siding with the specifists.

However, there is a problem here. Any conclusion (tentative though it might be) that the specifist thesis is more acceptable than the generalist thesis on the issue of critical thinking will only follow if an exclusive sense of 'or' is assumed (and *either* the generalist thesis or the specifist thesis is supported, *but not both*). As we have seen, Moore himself is less than equivocal on this, and in places, wants to acknowledge the importance of *both* the specifist and generalist theses. This conflict is fudged by calling the generalist approach a 'type of discourse' in the second passage above.

This reasoning is flawed. The generalist approach demonstrably sees critical thinking as more than 'a type of discourse'. As Moore notes correctly elsewhere, for the generalist—and not the specifist—critical thinking is a 'universal, general skill' that applies to 'the correct assessing of statements' (Ennis, 1962)—i.e. inference patterns not linguistic genre. For the specifist it is a 'loose category taking in diverse modes of thought' that are subject-specific. Moore seems to want to have his cake and eat it too. He wants to use an 'exclusive' sense of 'or' and reject the generalist conception in favour of the specifist conception, but in places he also wants to have an 'inclusive' sense of 'or' and keep the generalist conception as *a form of discourse* among others. This line of reasoning results in confusion. The solution to the 'debate', it seems to me, is not to *decide* between the two at all, but to see each in terms of a developmental approach similar to Ikuenobe.

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Is the generalist thesis false?

Moore's argument turns on an acknowledgement of the different 'dimensions' of *object, content* and *register* in the selectively chosen samples given from academic writing. Moore gives a detailed assessment of a range of texts from different disciplines. The examples Moore presents are reproduced in Appendix 1, and summarized in a table that Moore also provides (see Moore, 2004, pp. 7–8).

All the examples are selected because they present different examples of 'critical thinking' from different disciplines, and each evaluates a 'set of ideas' (Moore, 2004, pp. 7–8). Moore claims that, because the *object*, *content* and *register* of the examples are dissimilar, that this therefore casts the 'generalist' thesis into disrepute. Moore's argument can be expressed in the following hypothetical syllogism (I am paraphrasing from Moore's article):

Moore's argument

P1: If the generalist thesis is true, then examples of critical thinking from different disciplines should be able to be assessed using general skills of critical thinking.
P2: Examples of critical thinking from different disciplines *cannot* be assessed using general skills of critical thinking (the object, content and register are dissimilar for each example).
C: Therefore, the generalist thesis is false.

This valid argument form—*modus tollens* (or denial of the consequent)—provides further, practical, support for Moore's contention that:

> Universal general skills do not model the discursive forms that students have to engage with (and 'would seem to
> be pedagogically ill-conceived') [Tantamount to: critical thinking skills are *not* universal skills]. (Moore, 2004, p. 13)

However, I would submit that premise 2 of the above argument is false. To see why, consider Moore's claim that assessing texts 2 and 3 in terms of the 'non-gradable' terms of text 1, does not do justice to the evaluative criteria being employed in such texts (see Appendix 1). Moore suggests that the terms in texts 2 and 3: 'implausible' and 'ineffective'; 'holistic' and 'vivid'—unlike the terms 'true' or 'logical' (which might properly apply to text 1)—admit of gradable evaluation. It is possible to be 'more or less plausible', 'more or less vivid', and so on. Moore claims that, by contrast, it is not possible to be 'more or less true'. His point is that the evaluative criteria of text 1—which is presented as a textual instance of the 'generalist' model of 'critical thinking'—do not admit of 'graded' evaluation, and that therefore the generalist thesis is inadequate as a means of understanding all kinds of 'critical thinking'. The evaluative criteria that apply to examples like text 1, do not apply to texts 2 and 3, according to Moore.

However, this is a serious oversimplification of critical thinking as it is understood—or should be understood—in the generalist model. The generalist thesis is not restricted to the kinds of examples given in Moore's text 1, even if they are the main focus of Moore's attack on generalization. Strictly speaking, the generalist thesis is that understanding and application of *rules of logical inference applied to statements* (and not simply the language specific to disciplinary areas) assists in the transmission of the tools and principles of 'critical thinking' (i.e. these skills are not just taught by means of the subject-specific genre of the disciplines alone). In other words, critical thinking is more than 'a type of discourse'.

It needs to be noted that syllogistic reasoning patterns, such as those provided in text 1, are only *one form* of critical thinking—one model of logic—on the generalist model. Specifically, it is a form known as syllogistic logic (or Aristotelian logic) (Smith, 2003). Modern forms of critical reasoning, however, also admit of many alternative forms of logics—one of which is 'fuzzy' logic (Hajek, 2002). This form of generalist logical system admits of a range of truth values in-between 'true' and 'false'. Propositions may be assigned *degrees of truth* (truth values) which may be 'absolutely true', 'absolutely false' or some *intermediate* degree of truth. On this account, a

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proposition may in fact be *more true* than another proposition. Other systems of logic include: monotonic logics, paraconsistent logics, intuitionist logics, modal logics and relevance logics. At best, Moore's point applies only to the teaching of a *certain form* of generalist 'logic' (namely, syllogistic logic), not others.

Leaving this aside, however, it is not clear—even using the form of generalist logic that Moore is criticising—that his argument follows. For I would submit that texts 2 and 3 (given in Appendix 1) *can* be profitably discussed using the terms of general logical principles. This does not mean, of course, that the texts cannot *also* be profitably discussed in the terms of the linguistic discourse or subject-matter they are expressed in; it means only that Moore's argument that they cannot be adequately rendered in the terms of the generalist thesis is *false*.

The argument of text 2, for example, can be rewritten as follows (once again, I am paraphrasing from the example Moore gives):

P1: If different models of reasoning constitute what he calls 'subject areas', and have their own 'categor[ies] of understanding' and rules of reasoning, then the general thinking skills approach is implausible.
P2: The different models of reasoning *do* have their own rules of reasoning [evidence for this is presumably supplied elsewhere in McPeck's book].
C: Therefore, the general thinking skills approach is implausible.

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It would be clear from what has been argued so far that this argument is far from adequate, even if the conclusion does follow validly from the premises (as it does here). Even accepting that different disciplines have their own 'rules of reasoning' and 'categories of understanding' (whatever this might mean exactly), it need not be accepted, without further argument, that the general thinking skills approach is 'implausible'. Given this, premise 1, above, can be seen as a false premise. I have suggested in this paper (see above, 'The generalist–specifist fallacy') that there is no coherent reason why the terms of the generalist and the specifist positions cannot be jointly marshalled as useful and practical ways of approaching an understanding of 'critical thinking'. Indeed, they are best seen as *complementary* methods. Assuming otherwise commits the fallacy of the false alternative. I would suggest that McPeck's argument is a case of a valid argument with an unsound premise and a false conclusion. That this is so can clearly be seen once the argument is unravelled from the slab of disciplinary text that harbours it—a considerable advantage of the generalist method.

The argument of text 3—a review of a study by M. Hopkins written by K. Poethig—is admittedly more difficult to render in terms of the generalist model of critical thinking and more susceptible to misinterpretation as it is taken out of disciplinary context (which I acknowledge is *also* useful in understanding critical thinking). However, the argument as it stands goes something like this (note that there is a number of assumed premises and intermediate conclusions being made):

P1: A 'holistic' ethnography should attend to transnational linkages (or: if an ethnography attends to transnational linkages then it is 'holistic'). (Tacit, assumed premise.)

P2: [The author's] not attending to transnational linkages can be explained by the primary focus on women and children and their kinship rituals.
P3: If an ethnography primarily focuses on women and children and their kinship rituals, then the refugees will not express a political or national self-consciousness (beyond being survivors of the Khmer Rouge).
P4: Hopkins's study *does* focus primarily on women and children and their kinship rituals.

C1: Therefore, the refugees in Hopkins's study do not express a political or national self-consciousness (beyond being survivors of the Khmer Rouge) (from P3–P4).
P5: An ethnography that attends to transnational linkages would pay more attention to political transitions in Cambodia.
P6: Hopkins's study *does not* attend to political transitions in Cambodia (from P2)
C2: Therefore, Hopkins's study does not attend to transnational linkages (tacit, unstated conclusion, from P1–P3 and P5–P6).
P7: Given the profound shifts in Cambodia during the period of Hopkins's research, a study where the subjects express no political or national self-consciousness nor other transnational linkages, is surprising (from P1–C2).
P8: The subjects in Hopkins's study express no political or national self-consciousness and other transnational linkages (from P3–C1 and P7).
C3: Hopkins's study is surprising.

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It would be easy enough to go on to establish Poethig's main conclusion that Hopkins's study is not 'holistic'—in premise 1 it is only established that if an ethnography attends to transnational linkages, then it is holistic (nothing is established about Hopkins's study itself)—but I think the point being made here is already clear enough. The generalist model of understanding critical thinking—in terms of inference patterns between statements—is *quite* capable of handling arguments expressed in the language of the disciplines.

It might be argued that such a generalist approach is a blunt instrument and captures few of the subtleties of the language used—e.g. in relation to the extent of 'vividness' of Hopkins's study—but this is a slightly different point from the one Moore is making. (Moore is intimating that *because* it cannot capture 'vividness', it therefore cannot capture the argument being made—and this clearly does not follow.) At any rate, none of the linguistic subtleties impinge or influence the series of inferences being made. A generalist approach does not require such linguistic fineries as 'most vivid' to establish the patterns of inference in the argument. Indeed, such things add little or nothing to the argument, *qua* pattern of inference, though they might add something to the author's attitude to the article being reviewed, and the social context of the paper (Moore is right in stressing this point). But it is unreasonable to expect that any *one* approach to understanding critical thinking will do the entire job (that is, both analysis of general inference patterns and textual analysis). I am suggesting that both approaches—generalist and specifist—are needed.

One of the major advantages of a generalist approach is that it allows inferences to be made clearly and explicitly, so that they *can* be questioned and criticized. If I were Hopkins, I would more easily be able to attack Poethig's review from a reading of the above 'generalist"' rendering, than I could from Poethig's orginal text. Indeed, I would be able to point to the premises of Poethig's review that I disagree with, and

establish the reliability of drawing the conclusion that he has. I would be easily able to muster a counter-attack or reply.

However, I would not want to suggest that the generalist approach alone is a panacea. It also has disadvantages. It is true that this approach alone does remove the elegance of the prose by rendering it 'bluntly' as a series of inferences. But then again, academic writing is not poetry. It is written to advance knowledge by means of argument or evidence. Another disadvantage of such a rendering is that it can be done badly in the wrong hands. It requires hard intellectual work, and prose is—by its very nature—notoriously open-textured and vague (van Gelder, 2004). Different readers bring different assumptions to the argument and construe it differently. This can lead to renderings of the prose in quite different ways. (Note, however, this is also a problem for the *specifist* approach to critical reasoning which is based on the discourse of the disciplines alone.)

Revisiting the teaching of critical thinking

The problems of interpreting text in prose can be overcome, I would suggest, not by opting for a *specifist* approach to critical thinking, but by investigating better ways to render arguments using the *generalist* approach. This work is being done here in Australia. New forms of computer-supported diagramming techniques are advancing the representation of arguments (Monk, 2001; van Gelder, 2001, 2002). Moore's critique of the generalist method is, at best, a critique of *traditional* ways of teaching logic in critical thinking classes in Australian universities (and elsewhere). His 'text 1' is a representative example of the way in which generic critical skills were—and often still are—taught to undergraduates (a stock example, given in all first-year logic classes, is the artificial and somewhat un-illuminating syllogism: *All men are mortal, Socrates is a man, therefore Socrates is mortal*). Such examples have been a source of disquiet among the contemporary student body who are more focused on immediate application to discipline-specific relevance and, ultimately, career goals (Melville Jones, 1999). Theories of the classical syllogism, and techniques of formal logic are of little use in *real-world* reasoning (Ikuenobe, 2001; van Gelder, 2002).

Fortunately, things have moved on from that approach to teaching critical thinking. Now, in some courses, students are being taught how to identify and evaluate arguments themselves—largely free from logician's jargon—in discipline-specific contexts using computer-supported diagramming techniques. The generic inferences are still taught, but they are taught in a much more interesting way using more relevant examples. A simple argument using the *Reason!Able* software is given below. The argument: *Al Qaeda is not a state, so the US has not declared war on it* (something one might expect to see in a 'Letter to the editor') is plotted, using the software, in easy-to-follow, flowchart format. Premises are represented in boxes and the conclusion is shown at the top of the flowchart. Implied premises are also shown. Together the premises constitute the *reason* or *inference* made to reach the desired conclusion. These premises are, in turn, supported by—on the one hand—'common knowledge'

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Figure 1. The *Reason!Able* approach using computer-supported diagramming techniques (van Gelder, 2000)

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(the box with people in it), and—no grounds at all (the question-mark box)—on the other (Figure 1). The software also allows grounds for premises to be weighted with differing degrees of plausibility that can be assigned numerically (van Gelder, 2002). Arguments of any degree of complexity can be represented in this format and they can be applied to any disciplinary context (the *Austhink* group currently run seminars for leading law firms, ASIO and major corporations).

Reassessing the specifist approach

Much is lost in the 'fog' of academic discourse in the disciplines. This is indeed a pity. For it is on this discourse that the specifist relies. However, because genre-specific writing is open-textured and sometimes vague, students can lose sight of the arguments. Often students are not capable of understanding arguments being made precisely *because* they become lost in academic discourse (in very bad academic writing often *there is no argument* being made, merely an assertion). I point to just one example of textual 'fog' as a case in point:

> The move from a structuralist account in which capital is understood to structure social relations in relatively homologous ways to a view of hegemony in which power relations are subject to repetition, convergence, and rearticulation brought the question of temporality into the thinking of structure, and marked a shift from a form of Althusserian theory that takes structural totalities as theoretical objects to one in which the insights into the contingent possibility of structure inaugurate a renewed conception of hegemony as bound up with the contingent sites and strategies of the rearticulation of power.

I am not suggesting, of course, that Moore's paper falls into this category. Moore is as keen on academic clarity as I am. I take issue with his argument, not his writing. My point is that at the level of pedagogy, becoming lost in academic discourse—at the expense of seeing patterns of inference in arguments—is unfortunate in the extreme. At the level of what might be driving educational policy, it is a disaster. To see critical thinking in the terms of the 'specifist' alone—to see: 'the discourse associated with generalist critical thinking training as not a *general* discourse at all, but rather a quite *specific* one' (Moore, 2004, p. 13), is to run the risk of plumping for the 'fog' of disciplinary discourse over the clarity of generalist inference-making. (I am not suggesting that all disciplinary language is 'foggy', though increasingly in some disciplines it is. And I am certainly not suggesting that Moore makes this mistake, only that there is a danger of *students* doing so.)

I would submit that *unless* students are capable of 'deconstructing'—and I use this word in a non-technical and non-disciplinary sense—slabs of discourse into a series of premises leading to a conclusion, it is not clear that they have learned anything substantial about their subject (regardless of the subject-matter). Becoming embroiled in the discourse of one's discipline may have intrinsic merits, but doing this to the *exclusion* of understanding the patterns of general inference being made is to lose one of the important aims of education; that is, to be able to apply general critical thinking principles to any text under consideration (regardless of subject-matter).

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Conclusion

Moore's conclusion from all this is a form of 'qualified relativism' about the enterprise of critical thinking (Moore, 2004, p. 14). From the reasonable (indeed trivially true) assumption that the linguistic discourses of the various disciplines are distinctive and unique, and with the observation that students, by and large, move between linguistic discourses readily without problems (a premise I would question), combined with his earlier argument that the generalist thesis is inadequate (which I have criticized), Moore claims that there are problems of drawing together in some intelligent way 'the homogeneity of the general with the pluralities of the particular' (Moore, 2004, p. 14). According to Moore, it is not easy to see how the generalist model of critical thinking can ever capture the 'loose and diverse modes of thought' of the disciplines. Hence, he sides with the specifists and a 'qualified relativism' of what constitutes critical thinking. Critical thinking is not a general facility, which (given suitable training) we are all imbued with to a greater or lesser extent, but a 'particularist' facility to be devolved to the linguistic discourse of the disciplines.

Given the preceding discussion, however, this 'qualified relativist' conclusion is a *non sequitur*. Critical thinking, as a general facility, *can* be applied to the forms of discourse of the disciplines. I have used only deductive forms of reasoning in this paper, but, of course. 'critical thinking' encompasses much more than this (Ennis, 1987). Moreover, as argued, there is no good reason to rule out a combinatory-'infusion' approach whereby critical thinking is seen in terms of *both* general skills and

particular skills used in the service of the disciplines (Ennis, 1997). The former is important because it outlines the principles of good reasoning *simpliciter* (what constitutes sound reasoning patterns, invalid inferences, and so on). The latter is important because it outlines how the general principles are used and deployed in the service of 'academic tribes'.

Recent work in critical thinking has been able to see past the false dilemma that Moore has presented, and to accommodate the different notions of critical thinking in a unified approach (Ikuenobe, 2001). Critical thinking is therefore more than simply 'a loose category taking in diverse modes of thought' (Moore, 2004, p. 4). There is nothing relativist—or 'qualified relativist'—about it.

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Appendix 1. Moore's examples

Text 1: Extract from 'thinking' textbook for students: Ruggiero, V. (2001). *The art of thinking: A guide to critical and creative thought* (p. 247). New York: Addison Wesley Longman.

Consider the following ARGUMENT:

All Mensa members are intelligent
Some goatherds are Mensa members
Therefore, all goatheards are intelligent.

It is true that all Mensa members are intelligent (at least in terms of the mental characteristics measured by intelligence tests). So it would be logical, even inescapable, to conclude that those goatherds that are Mensa members are intelligent. But the premise speaks only of some goatherds not all of them. So it would be improper to conclude that all of them are intelligent. Non-members may be positively brilliant, but too modest to celebrate their intellectual gifts, or they may be dumber than the animals that they tend. On the basis of what is given here, we simply cannot say.

Text 2: Extract from chapter on 'critical thinking': McPeck, J. (Ed.) (1990). *Teaching critical thinking: Dialogue and dialectic* (pp. 36–7). New York: Routledge; emphasis in original.

I am arguing that just as different rules of predication constitute different language games, so different models of reasoning constitute what we call 'subject areas'. Each is a different 'category of understanding' (in a Wittgensteinian sense), and each has its own 'rules', as it were, of reasoning. That is what renders a general thinking skills approach *implausible f*rom a theoretical point of view, and *ineffective* from a practical point of view—at least so I submit.

Text 3: Extract from anthropology review article: Poethig, K. (1998). Review: 'Braving a new world: Cambodian refugees in an American city' by Mary Carol Hopkins. *American Anthropologist*, *100*(1).

It is surprising that the refugees in Hopkins's study express no political or national self-consciousness beyond their now classic formulation as survivors of the Khmer Rouge. Should not a '*holistic*' ethnography also attend to these transnational linkages, particularly given the profound shifts in Cambodia during the period of her research? This absence may be partly due to the fact that her time was spent primarily with women and teenagers, who might have paid less attention to political transitions in Cambodia. Indeed, Hopkins's ethnography is the *most vivid* in sections dealing with women's role in family life, particularly kinship relationships and rituals.

Text—synopsis	Field	Genre	Rhetorical purpose
Text 1: Evaluation of syllogism	Critical thinking	Textbook	Pedagogic
Text 2: Evaluation of educational approach	Critical thinking	Monograph	Expository
Text 3: Evaluation of Ethnographic study	Anthropology	Review	Expository

Source: Moore (2004).

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