Belief and Negation[1]

JONATHAN E. ADLER *Brooklyn College–C.U.N.Y.*

Abstract: This paper argues for the importance of the distinction between internal and external negation over expressions for belief. The common fallacy is to confuse statement like (1) and (2): (1) John believes that the school is not closed onTuesday; (2) John does not believe that the school is closed on Tuesday. The fallacy has ramifications in teaching, reasoning, and argumentation. Analysis of the fallacy and suggestions for teaching are offered.

Résumé: Je soutiens qu'il est important de distinguer la portée des négations internes et externes sur les jugements qui expriment une croyance. L'erreur courante est de confondre des jugements tels que: (1) Jean croit que l'école n'est pas fermée mardi; (2) Jean ne croit pas que l'école est fermée mardi. Cette erreur a des implications dans l'enseignement, les raisonnements, et l'argumentation. J'offre des suggestions qui se rapportent à l'enseignement.

Keywords: belief, negation, external negation, internal negation, fallacy, teaching, pragmatics.

1. The Withhold/Deny Distinction

Confusions of internal and external negation over expressions for belief (the *withhold/deny* distinction) generate fallacies and misunderstandings of reasoning. Failure to appreciate the distinction helps explain distortions in public debate and opinion (particularly, extreme or either-or thinking).[2]

2. Diagnosis of the Fallacy

The distinction is illustrated by (1) and (2):

(1) John believes that the school is not closed on Tuesday.

(2) John does not believe that the school is closed on Tuesday.

The fallacy is to read or hear (2) as (1), and not to recognize that (1) entails (2), but not conversely. Correlatively, the denial of

(3) John believes that the school is closed on Tuesday.

is wrongly taken to be (1). But (1) is only the contrary of (3). Both could be false. The true denial—contradictory—of (3) is (2). One's denial that one holds a belief is just that: a denial to hold a belief. It is not to affirm that one holds a different—specifically, opposite belief.

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One pillar of the underlying confusion that deserves to be singled out is a misapplication of the law of excluded middle. From the fact that either **p** or ~**p** it does not follow that either one believes **p** or one believes ~**p**. Visualizing the difference helps to make the point vivid:

> For every proposition **p**, either **p** or ~**p**.
>
> For every proposition **p** and for every person *X*, either *X* believes **p** or *X* believes ~**p**.

The failure of this seductive inference is no restriction on excluded middle, but a misapplication of it. What does follow from the law of excluded middle is only, of course,

> For every proposition **p** and for every person *X*, either *X* believes **p** or it is not the case that *X* believes **p**.

3. Scope and Illustrations: Introductory Philosophy

A common and glaring way the issue has come up for me is from teaching the most familiar of introductory texts—*Meditation I*. Since, under the Dreaming Argument, Descartes does not believe—cannot be certain—that he is seated by the fireplace, does he believe that he is not seated by the fireplace? To answer affirmatively is to commit a fallacy that is not only egregious on its surface, but one that starkly violates the point of the method of doubt.

Nevertheless, I assume that this fallacy occurs regularly, based both on my own observations and on the account of the fallacy below. It goes along with another error of interpretation: that Descartes believes in the Evil Demon, rather than that he merely supposes it. If you take yourself as compelled to either believe that there is an Evil Demon or believe that there isn't, then it is not surprising that Descartes' supposition is construed as his belief.

These two errors are closely affiliated in the text. Just before Descartes introduces the Evil Demon, he addresses the psychological difficulty of adherence to his method of doubt now that it demands of him so thorough a withholding of assent as to include, for example, the proposition that he is now seated by his fireplace or that 2 + 3 = 5:

> For long-standing opinions keep returning, and, almost against my will, they take advantage of my credulity . . . .

So he proposes to aid his resolve to withhold assent by going to the extreme of imagining that what is at all doubtful is actually false:

> Hence, it seems to me I would do well to deceive myself by turning my will in completely the opposite direction and pretend for a time that these opinions are wholly false and imaginary . . . .[3]

So in order to keep himself from believing (assenting to) that which he is inclined to believe (since very probably true), he tries to deceive himself to take the stronger negative attitude of denial. He will actually, if temporarily, manipulate himself to

believe false these very probable, but not certain, matters, rather than merely withhold assent, as is strictly dictated by the method of doubt.

How is it that the withhold/deny distinction which is so fundamental to Meditation I—virtually explicit in it—is so readily overlooked? I shall hold off until later (section 7) extended treatment of the sources of the fallacy. Let us here, however, just break down the original problematic inference, so as to set out the subtle transitions:

(4) I cannot be certain that I am seated by the fire.

(5) So I ought not believe that I am seated by the fire.

(6) So I do not believe that I am seated by the fire.

(7) So I believe that I am not seated by the fire.

Obviously, it is crucial that students understand on textual grounds that (7) could not hold, for the very reason that Descartes infers (5) from (4). The method of doubt dictates that one ought not to believe where there is a lack of certainty; and if Descartes is not certain that he is seated by the fireplace, he is surely not certain that he is not seated by it.

A more overt role for the distinction, though from a less frequently used text, is as a foil in James' argument that we sometimes ought to 'will to believe'.[4] James recognizes that between believing that Smith is rich and believing that Smith is poor there is no forced choice. A forced choice enters only with an exhaustion of cases due to a full external negation, generating the contradictory, not just a contrary. You are forced to either believe that Smith is rich or not believe that Smith is rich.

Now the crux of James' argument is that in the case of a certain sub-class of (potential) beliefs—notably beliefs in God—the logically unexcluded middle (of agnosticism) is effectively or practically excluded. Since the potential to discover the truth of religious belief vanishes as much from agnosticism as from atheism, the choice between belief in God and disbelief in God is effectively, though not formally, a forced choice.

Students can only appreciate how strong is James' recommendation by conceptualizing at a more abstract level a distinction that they are already familiar with—the distinction between agnosticism and atheism. They need to attend to the difference between

Jane believes that there is no god.

and

Jane does not believe that there is a god.

In good part from this presentation alone, a distinction that they already know comes to have a salience and a generality that it previously lacked.

The above two illustrations from within introductory philosophy texts have broader import. What is wrong with the inference from (4)–(7) is not tied to the

specifics of Descartes' assumptions. Let me support this point by a parallel example, which highlights a further difficulty. A novice test drives a Lexus, and concludes that it has poor handling. Subsequently, in speaking to experts, the novice comes to believe that he is ill equipped to make the complex assessment. Now consider:

(8) I cannot be sure that the Lexus handles poorly (because I am not competent to judge).

(9) So I have evidence that I ought not to judge that the Lexus handles poorly.

(10) So I have evidence that the Lexus does not handle poorly.

(11) So I should believe on my evidence that the Lexus does not handle poorly.

The fallacy of moving from (8)-(11) ((9)-(10), specifically) can be explained in ordinary terms: That I am a poor judge is a reason for my not believing that the Lexus handles poorly. But it is not thereby a reason that the Lexus does not handle poorly. It is illicit to infer from evidence not to believe that **p** (external-negation-belief) to evidence to believe that not-**p** (internal-negation-belief).

The more general epistemological point is that the insufficiency of the evidence or reasoning to establish a case does not imply sufficiency for its denial. Just as one can believe, disbelieve or have no belief in a matter, so evidence can not only establish or refute a claim, but it may fail to settle it one way or another. ("Disbelieve" is sometimes used for the weaker, external negation of belief ["not believe"]. For the purposes of this paper, I will use it only for the stronger, internal negation ["believe not"].)

Turn back to James' argument. The argument is of particular interest to informal logic because it is a defense of one form of the argument from ignorance (roughly, if the evidence cannot refute a claim, it is permissible to believe it.) In fact, on a narrow construal of the argument from ignorance, it exhibits a formal structure similar to the basic withhold/deny fallacy. Woods and Walton observe that the fallacy in one form can be "exhibited as confusion between the pair"

$\sim Ka\sim$**p**/**p** with $Ka\sim\sim$**p**/**p**.[5]

("Kx**q**"= "x knows that **q**"; "a" is a denoting expression).

A related confusion expressed in ordinary English would be: "*x* doesn't know that **p** is false. So *x* knows that he hasn't shown that **p** is false. So it's possible (for *x*) that **p** is true."

In treating entitlement to belief as a practical matter through his defense of the argument from ignorance, James encourages the withhold/deny confusion, although he is clearly aware that it is a confusion. For James' argument seeks to reduce 'not believing' to 'disbelieving' because the practical consequences of the former are indistinguishable from that of the latter. So he can then render the

options of belief and disbelief forced choices. But this is just to assume that the matter of belief is a practical, rather than a conceptual, one.[6] However, since belief claims the truth of its content and it is a claim that can only be fulfilled by evidence, the option of not believing when the evidence is too weak, is ineliminable.

4. Wider Import I: Not Proving vs. Disproving

Legal reasoning or legal proof provides a familiar analogue of the withhold/deny distinction. The prosecution has the burden of proof, and generally jurors report their belief as that the defendant is guilty or not guilty, not that the defendant is guilty or innocent. The jury in the criminal trial found O.J. Simpson not guilty. The prosecution has failed to make its case, rather than that the defense has established his innocence.

But we should not represent the jury's finding the defendant not guilty by way of the fully external negation: It is not the case that they find the defendant guilty. For to find the defendant not guilty is to both succeed at coming to a verdict and for that verdict to be one of not guilty. But the full external negation embraces (is implied by) not only the finding of the defendant not guilty, but also the failure to reach a finding (a "hung jury"). In the latter case, there is a re-trial, but not in the former.

If we turn from (legal) proof to argument, we recognize a rudimentary lesson. An objection or criticism or counterexample succeeds if it shows that an argument fails to establish its conclusion. It need not show that the argument establishes the denial of the conclusion. Indeed, the critic may accept the conclusion.

Yet, consider another standard introductory philosophy text: Hume's *Dialogues Concerning Natural Religion*. Cleanthes' Design Argument is Philo's target, and in Part V, Philo concludes that

> **First**, by this method of reasoning you [Cleanthes] renounce all claim to infinity in any of the attributes of the Deity . . . .
>
> **Secondly**, you have no reason, on your theory, for ascribing perfection to the Deity, even in his finite capacity; or for supposing him free from every error, mistake, or incoherence, in his undertakings.[7]

The question is whether Philo is claiming that Cleanthes' argument

a. really shows that god is finite and imperfect

or

b. fails to show that god is infinite and perfect.

Initially, students have difficulty deciding between these, yet there is a yawning gap between them. (a) is a much stronger claim than (b). An objection or counterexample to an argument aims to show that the argument fails, not that it proves anything, let alone the opposite. It would then be rare for critics to attempt the much stronger result because it is overkill and it is usually evident that the effort is hopeless.

5. Wider Import II: False Alternatives

Misunderstanding of the withhold/deny distinction promotes the fallacy of *false alternatives*: Either you are in favor of, e.g., the morality of abortion (pro-choice) or you are against it (pro-life). But, for any typical opinion *R*, one has the option not only to be pro-*R* (pro-choice) or contra-*R* (pro-life). One may be neither because, say, one finds the evidence insufficient to determine a position.

Under the sway of the false alternatives fallacy, genuine alternatives are overlooked. One may dissent from the pro-choice position in many ways besides being pro-life. One may have a highly qualified view of when abortion is morally permissible. Besides denying the possibility of different positions other than the pro/con ones, the fallacy of false alternatives directs us away from looking for shared assumptions or presuppositions of both alternatives that might be rejected.[8] Instead, we are directed toward pro-con thinking: that for each issue, you either favor the prevalent view or you are opposed to it.[9]

One plausible way that the fallacy of false alternatives develops is that there is a dominant position *R* on an issue. So a challenge to that position *T*—a contrary position—can be effectively specified as con-*R*. But then the misunderstanding of the law of excluded middle renders these exhaustive. The result is that everyone is either pro-*R* or con-*R* (pro-*T*)—exclusively and exhaustively.

6. Teaching

Teachers can readily elicit from students recognition of their own withhold/deny fallacies, as well the structure of the fallacy and why it is committed. But the learning cannot be wholly Socratic or by 'discovery'. Explicit aids, instruction, and practice are required. So too is the imparting of theoretical understanding.

Students visibly display an appreciation of progress in the clarity of their thought when they come to discern that (1) and (2) are not equivalent; that (1) implies (2) but not conversely. Broadly, the lesson is that a lack of belief is just that. It doesn't imply that one has the opposed belief (in the negation of what isn't believed).

One part of the teaching must involve marshalling one's common sense. Sometimes this will take the form of a direct assessment of an inference. Juxtapose the opening premise from above

> (8) I cannot be sure that the Lexus handles poorly (because I am not competent to judge).

with only the ultimate conclusion

> (11) So I should believe on my evidence that the Lexus does not handle poorly.

How can my thinking of myself as lacking competence in a judgment generate evidence toward the opposed judgment (which, in fact, presumes my competence to judge)? In the excerpt from Hume's *Dialogues*, it is implausible that Cleanthes'

argument is so bad and his understanding of it so completely off, even accepting Philo's criticisms, that the argument actually establishes the opposite conclusion. In the jury trial of O.J. Simpson, since students know the outcome (and that of the subsequent civil proceeding), they readily see that finding him not guilty is very different from finding him innocent.

Common sense is most bluntly offended by the consequence of withhold/deny confusions that we ascribe to ourselves a position on virtually every question (as to whether a proposition is true). If to not-believe is no different than to believe-not, then, with the addition of some innocuous assumptions, we derive the absurd result that for every proposition **p** and every person X, X either believes that **p** or disbelieves that **p**.[10]

An in-road to clarity on the withhold/deny distinction is to ask students to consider some condensed, but otherwise not especially contrived, dialogue:

A: Abortion is impermissible.

B: I don't believe that.

C: Abortion is permissible.

B: I don't believe that either.

The question posed is this: Is B consistent? A good number of students answer "no" because, presumably, the positions affirmed by A and C appear to them exhaustive.

I draw out the problem with the "no" answer, relying upon any example where both a proposition and its denial are noticeably lacking in support:

(12) There are an odd number of atoms in this table.

(13) There are an even number of atoms in this table.

Asking students about each of these separately (and you might have to impose some distracting questions in between), elicits a denial (of belief) from each student. The results are equivalent to the following dialogue:

A*: There are an odd number of atoms in this table.

B*: I don't believe that.

C*: There are an even number of atoms in this table.

B*: I don't believe that either.

This dialogue overtly parallels the former one and students are perplexed, since B*s position is noticeably their own.

You might proceed to represent the relevant beliefs of individual members of the class explicitly, so as to highlight the contrast. (But the complexity and artificiality of the representation below is likely to strain credulity—students may think that some trick is being played). Each student can be represented as having the following thought:

> I do not believe that this table contains an even number of atoms and I do not believe that this table contains an odd number of atoms.

But it is false for each of them that

> Either I believe that this table contains an even number of atoms or I believe that this table contains an odd number of atoms.

Not only is the latter false (of each of them!), but it must be if the former is true. They're incompatible.

By this stage, students would explain the consistency of B*s position (and so, derivatively, B's) as due to a lack of evidence one way or the other. B*, like them, just holds no belief on the matter—and that is the key insight. Besides belief and disbelief, there is the possibility of no belief—agnosticism about most any proposition is the illicitly excluded middle, yet the typical one. Students should now also be able to generate simple examples with a little prodding: If you do not know who Smith is, then you cannot be forced to believe that Smith is handsome or to believe that Smith is not handsome [or disbelieve it].

The central analytical points lend themselves to a standard pictorial representation. Let "X believes that **p**" be "B**p**". Then we have four possibilities:

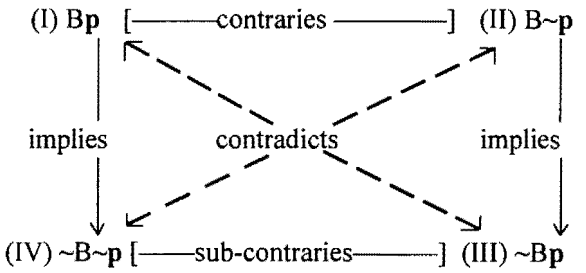
(I) B**p**

(II) B~**p**

(III) ~B**p**

(IV) ~B~**p**

We may now invoke the traditional square of opposition:



The set-up will work, of course, for other operators over which negation can operate (e.g. necessity, knowledge), since the basic idea is to substitute one of these, like belief, for the quantifiers in the traditional square.

The crucial representation is that (III) does not imply (II) (and (IV) does not imply (I)). If A doesn't believe that the coffee beans are in the cabinet, he need not believe that they aren't there. He may simply not be sure.

In the traditional square the problem of existential presupposition arises for inferences which parallel that from (I) to (IV) or (II) to (III). But students should here accept the inferences without fuss.

However, there is a rarified difficulty that may be raised and it should be resisted. Couldn't (I) and (II) both hold due to self-deception or because one's belief is non-conscious? We should abstract from this problem for pedagogical reasons—we should highlight the simple and sharp logical relations before addressing qualifications and complexities.

But we should also abstract from this problem as an interference with recognition of the demands imposed by the concept of belief itself. The way to effect the purification is to assume that belief is in full awareness. Given that assumption, we then inquire: does the logic of belief allow for one to simultaneously and in full awareness believe that **p** and believe that not-**p**? The answer is "no", and we can test this answer through assertion, as the expression of belief. Can one (sincerely) assert, in a single exchange, both that **p** and that ~**p**? No. The unassertibility reflects the fact that no one in a single consciousness can believe **p** and believe ~**p**. The incompatibility of the contents (**p**; ~**p**) rules out belief and assertion, since both assertion and belief aim to present their contents as true, and **p** and ~**p** cannot both be true.[11]

Earlier lessons can now be extended and neatly presented. (I) and (III), as well as (II) and (IV), are contradictory, with opposed truth values. (I) and (II) are contraries. They cannot both be true. But they can both be false. Both affirm that X has a belief. In one case the belief that **p** and in the other, the belief that ~**p**. But X cannot have both those beliefs. So (I) and (II) cannot both be true. But they can both be false, if X fails to have a belief one way or the other. By parallel reasoning, (III) and (IV) are kinds of contraries ("sub-contraries"), not contradictory. Both cannot be false. For if both were false, it would have to be that their denials are true. But the denial of (III) is (I) and the denial of (IV) is (II), and we just observed that (I) and (II) cannot both be true.

7. Etiology of the Fallacy, Especially Pragmatic

A (brief) theoretical and (mildly) speculative discussion can now be given to explain the persuasiveness of withhold/deny confusions. We want to understand why, recall, (2) is conflated with (1):

(1) John believes that the school is not closed on Tuesday

(2) John does not believe that the school is closed on Tuesday.

Some suggestions have already been made (e.g., misapplication of the law of excluded middle; the kind of subtle transitions in (4)–(7) or (8)–(11)). An earlier discussion gestures toward the basic explanatory factor of the limited everyday usefulness of large-scope negation over belief, though we did not attend to it then. Consider again the dialogue sketch:

A*: There are an odd number of atoms in this table.

B*: I don't believe that.

C*: There are an even number of atoms in this table.

B*: I don't believe that either.

What is immediately noticeable is that neither what A* nor C* assert are realistic—no one would assert what A* and C* do because what they assert is blatantly unbelievable. Since we hardly bother to assert what is starkly unbelievable, so too the infrequency of their denials. But then we have less familiarity with natural uses of the external, as contrasted to the internal, negation (with respect to belief).

This observation is a pragmatic one, and a substantial part of any explanation of the fallacy will be pragmatic, particularly along Gricean lines.[12] Conversationally, (2), read strictly, is not usually as relevant or informative as available alternatives. If John simply has no belief on a matter, his position would normally not be worth introducing.

An immediate response is that (2) would be appropriate for *denying* an assertion that reports someone's belief, and it is a thesis of pragmatics that negations are normally introduced only as denials of prior claims. So (2) might seem appropriate to offer to deny a natural assertion like

(14) John believes that the school is closed on Tuesday.

But if someone in the audience, who knows John, thinks that this [(14)] is false, he is nevertheless not likely to assert (2) (or to assert (2) so that it is not construed as (1)). For when we have evidence that someone does not hold a belief, relative to a specific claim, it is because we have evidence for something stronger than the bare denial (2) namely, (1).

I add the qualification "relative to a specific claim" because for overwhelmingly most matters we lack any belief. Every one of you lacks a belief on how many times Grover Cleveland blinked on his fifth birthday. So the enormous number of truths of the form "X does not believe that **p**" will hardly ever be informative to assert. But, as we continue to emphasize, even when truths of that form are informative, there will generally be available a more informative (and no more prolix) assertion using a small-scope negation.

The prior reasoning explicitly assumed that a negated statement is normally interjected only as a denial of a prior claim. Obviously, it is because this is only generally true that the withhold/deny distinction does so much useful work. Still, if this pragmatic generalization holds, the conversational usefulness of external negation over belief is very limited.

If X affirms to Y that **p**, thereby expressing his belief that **p**, Y's dissent will generally be to **p**, not to X's belief in it. After all, it is **p**, not anyone's attitude toward it that is going to be of interest. The problem would be eased if we expressed the belief that **p** in the form "I believe that **p**". However, the latter is heard as weaker than the normal assertion of **p** itself. (Compare: "Ralph's in his office";

"I believe Ralph's in his office".) So, again, a regular opportunity for large-scope negation over belief to reach center stage is surrendered.

The problem of *focus* just broached is a problem for the usefulness of external negation generally, not just as governing belief. For, take any simple assertion shorn of an operator on statements (like belief),

(15) The coat is on the bed.

Given (15)'s pragmatic focus on whether the predicate holds of the subject, the denial, even if of external form,

(16) It's not true that the coat is on the bed.

will be construed, and, typically, rightly so, as

(17) The coat is not on the bed.

Russell, most famously, taught us of the danger of pragmatic focus to understanding logical form.[13] He clarified thought when he observed that

> 'the present King of France is not bald'
>
> is false if it means
>
> 'There is an entity which is now King of France and is not bald',
>
> but is true if it means
>
> 'It is false that there is an entity which is King of France and is bald'.[14]

Another source in philosophy where we learn of the depreciated value of external negation itself is in discussions of the 'raven paradox'. The large scope negation of a "projectible" or natural class (e.g. black, ravens) is a class that is too wide and heterogenous to itself delineate a projectible or natural class. The fully negated class (e.g. non-black, non-ravens) will hardly be worth talking about.[15] For brevity, we can speak of colors other than black as "not black" or of birds other than ravens as "not ravens". But these tacitly involve restricted negations, not the full complement classes. The full complement classes—non-black (including numbers, air, and love) or non-ravens (including hamsters, Chicago, and *Meno*)—defined by a large scope negation is of little everyday use.

Psychologically, the bias against large scope negation is consonant with our bias toward believing. We prefer belief to a lack of belief (for propositions that we entertain). But this preference immediately, though not fully, transfers to disbelief, since to disbelieve is to believe. For John to disbelieve that the Toyota is a small car is just for John to believe that the Toyota is not a small car.

Of course, expressions for disbelief are, as linguists put it, *marked*—and so disfavored—compared to expressions for simple belief by the very inclusion of a negation sign. We know that negated propositions are more complex and cumbersome (to comprehend and process) than the proposition unnegated—a crucial symptom of markedness. Denial, as indicated above, is more burdensome than acceptance of a proposition. For with denial we first represent the proposition affirmatively, and then negate it.[16]

Our disposition toward credulity, noted two paragraphs back, is highly characteristic of children, as Thomas Reid and contemporary psychologists observe. This early credulity has been taken as evidence for the "Spinozistic" view that comprehension and acceptance of propositions (and so belief) are simultaneous.[17]

If this view is correct, our psychology is at variance with our epistemic ideals. The epistemic ideal is that not believing is the natural state. We move from it to enter the claim of belief (or disbelief) only with sufficient evidence or reason. But the psychological facts appear to be that the natural state, for propositions we entertain, is to believe them, and only subsequently and with effort do we come to not believe them.

8. Conclusion: Implications

In closing I want to emphasize the highly economical nature of teaching the withhold/deny distinction. We can pack a lot of learning into a few classes, as is already manifest. Among the topics covered and concepts employed are: internal and external negation over belief, consistency, entailment or implication (in contrast to implicature or what is suggested), the law of the excluded middle. Once students are clear on the withhold/deny distinction, other, related fallacies should be easier to detect. For example, students should now be uncomfortable with a modal argument that comes up in many and varied contexts, including, famously, *Meditation II*. It is to (mis)read the *cogito* argument as follows

If I think, I must exist.

I think.

So, I must exist.

Students should now be able to locate the fallacy in the very natural placement of the opening premise's "must" in a small scope position. Instead, it should have a large-scope reading (if this rendition is even to be admitted to candidacy.)

In teaching these topics, students gain appreciation for the abstraction of structure from ordinary statements and arguments, the substitution of further content in those forms, and the need to discriminate between very similar expressions (differing, say, only in the placement of the negation sign). Additional to the basic lessons, I want to close by highlighting some further, related ones, also pedagogical and practical (roughly, 1–5) and substantive and theoretical (roughly, 6–8):

1. The motivation for pursuing the topic stems from confronting students' with their own fallacies. Here we have the Socratic pre-condition to learning—perplexity and recognition that one does not understand.

2. Students are introduced to a Meno's Paradox-like fact: that there is a difference between knowing a distinction and recognizing its applicability in specific cases. Our job is to exploit this knowledge or competence so that we can guide them to self-correct their fallacious reasoning.

3. There is a gain in logical self-understanding: we have a natural bias toward the stronger (more informative) interpretation. Besides the central misinterpretation of large-scope for small-scope negation, we also observed this bias in the misreading of Descartes' supposition (of an Evil Demon) for a belief. So clarification of the withhold/deny distinction should aid understanding of conditional (suppositional) reasoning.

4. The initial reaction to pairs like (1) and (2), and the others set out here, is that they are nitpicking or verbal tricks. By the end, students appreciate that the nitpicking differences make a difference. The value of precision in thought and communication is fostered. Technicalities and contrivances are sometimes necessary to secure that value. After all, much of the confusion would be averted if we regularly used the ponderous "It is not the case that . . .".

5. Even though there are other ways to explain (away) the confusion, there is enormous independent value in the Gricean account. Students should be competent with the distinction between what is said and the saying of it, and between what is implied and what is 'implicated'.[18]

6. If the withhold/deny distinction is fundamental to clarity of thought and a high priority in our teaching, then we should reject an influential view in informal logic which denigrates the value of formal logic in teaching for improved critical thought. The view is heard casually much more than in print,[19] but its practical import is evident in many informal logic and critical thinking texts.

Yet, the rudiments of the withhold/deny distinction are presentable with brevity and crystalline clarity by simple devices of elementary logic: negation and some logical operator (quantifiers, modals). When presented formally, the distinction is susceptible to exercises that students can complete quickly with a sense of mastery. A little formal logic goes a long way toward promoting good, logical thinking in everyday reasoning and argument. If you try to teach the distinction only within everyday contexts, you face the difficulty that Frege and Russell fought against of ordinary language itself misleading in regard to logical form.

7. When we present the logical form of the fallacy—inferring $B\sim\mathbf{p}$ from $\sim B\mathbf{p}$—or view instances of the fallacy with its ascription of that fallacy vividly in mind, we will be suspicious of the claim that people actually commit such a fallacy. We are poised to swallow the popular view that fallacies are the contrivances of uncharitable theorists—people do not readily and systematically commit or fall for the standard fallacies. (Indeed, the more radical proponents of this view hold that many of the standard fallacies are not fallacies at all, but merely types of arguments that are only sometimes fallacious).[20] We will then look at the examples above and say things like "Well, maybe a denial of belief was contextually heard (and reasonably so) as really affirming a disbelief".[21]

However, if you look at the above examples and accompanying explanations without theoretical bias, you will readily go along with the ascription of withhold/

deny fallacies. For one thing, the examples in their natural habitat are embedded in extensive passages. (The clearest example above is the excerpt from Hume, which highlights the not-prove/prove-not distinction. The actual passages quoted are both preceded and followed by argument and elaboration, and Philo's actual words do suggest the stronger reading.)

But the main advantage of drawing the examples from actual classes is that these are our example as teachers. So they are also the examples familiar to those who deny that systematic fallacious reasoning is real, common, and a pillar of distorted thought. In their writings, these authors tacitly deny their own experience and practices (of correction). Now I do not think that this denial is dishonest or capricious. In general, it is simply *distraction*—distraction both from one's professional knowledge, as well from one's competence in ordinary linguistic communication, by heady, abstract reflection (on, say, the Principle of Charity). And if this is so, then we can easily make sense of why fallacies starkly obvious when presented naked can be so seductive upon our reasoning within their real surroundings. The content (and context) in which they are embedded, together with our need to economize, lead us to concentrate on assessments of plausibility or truth, rather than cogency, and, correlatively, we don't bother to dig deeper than surface structure to get at the form of the inferences.

8. As already noted, defects in understanding internal and external negation over belief is symptomatic of failure to appreciate the internal and external negation distinction generally, and so too the nature of contraries and the contradictory. With the square of opposition we already engage these topics, even if we do not harp on them.

Although the distinction we are concerned with is a sub-topic of the logic of negation, our topic provides an excellent introduction to the broader one. We can provide helpful background to grasping the more fundamental ideas about negation and good motivation for pursuing those ideas through first addressing the more immediately challenging withhold/deny distinction. The order of teaching and pedagogy is not the order of knowledge.

Notes

[1] My thanks to Paul Saka and a referee for *Informal Logic* for helpful comments.

[2] I only skim the surface of a very rich topic. To appreciate just how rich, see the bible on internal/external negation: Lawrence Horn, *A Natural History of Negation* (Chicago: University of Chicago Press, 1989).

[3] René Descartes, *Discourse on Method* and *Meditations on First Philosophy*, third edition, D.A. Cress, translator. (Indianapolis: Hackett Publications Co. Inc, 1993), p. 62.

[4] William James, "The Will to Believe," in A. Castelli, ed. *Essays on Pragmatism* (Harner Publishing Co., New York, 1951), pp. 88-109.

[5] John Woods and Douglas Walton, "The Fallacy of '*Ad Ignorantiam*'," *Dialectica* 32 (1978), pp. 87-99. See especially p. 92. But this construal I find too narrow. See "Fallacies not fallacious: Not!" *Philosophy and Rhetoric* 30 (1997), pp. 333-350.

[6] I defend this thesis in "The Ethics of Belief: Off the Wrong Track," *Midwest Studies in Philosophy: New Directions in Philosophy*, XXII (Oxford: Blackwell's, 1999): 267-285.

[7] David Hume, *Dialogues Concerning Natural Religion*, Richard H. Popkin, ed. (Indianapolis: Hackett, 1980), p. 35.

[8] Grice, for example, could not have rejected the shared assumption of both the formalists and the anti-formalists (that there is a deviation between natural language logic and formal logic), unless he refused to represent them as exhaustive. See Paul Grice, "Logic and Conversation" in his *Studies in the Way of Words* (Cambridge: Harvard University Press, 1989).

[9] Although I focus on how withhold/deny confusions facilitate pro-con thinking, I leave open the conjecture that the influence works in the other direction as well.

[10] The conclusion does not hold if belief is an extreme degree of belief, and degrees of belief are analyzed probabilistically, given the negation law for probabilities. But this is a reason to be suspicious of the psychological reality of such an analysis.

[11] The argument here is borrowed from my "The Ethics of Belief: Off the Wrong Track," *op. cit.*

[12] See Grice, *op.cit.*

[13] It is focus that facilitates *many questions* fallacies. An answer to the focus of a complex question is taken as commitment to an affirmative answer to a presupposed (non-focal) question. So to answer either "yes" or "no" to the disguised complex question, "Did John rudely leave the room?" is taken to imply commitment to John's having left the room.

[14] Bertrand Russell, "On Denoting," in his collection, *Logic and Knowledge: Essays 1902-1950*, R.C. Marsh, ed. (New York: Capricorn Books, 1956): 41-56. Quoting from p. 53.

[15] See W.V. Quine, "Natural Kinds" in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), pp. 114-138.

[16] For the relevance of this point in the context of the disposition to believe, see Daniel T. Gilbert, "How Mental Systems Believe," *American Psychologist* 46 (1991), pp. 107-119.

[17] Gilbert, *ibid.* The advantages of such a system are firmest when the system is under constraints to economize—"resource depletion"—and the environment is not a deceptive one.

[18] For an informal logic text that gives a prominent place to Grice and conversational reasoning see Robert J. Fogelin and Walter Sinott-Armstrong, *Understanding Arguments* (New York, Harcourt Brace Jovanovich, 1990).

[19] Michael Scriven writes: The term 'informal logic' is good because it stresses the rejection of the formal logic approach. ("Open Forum: What Are We Doing," *Informal Logic* 9 (1987), p. 52). By contrast, see Donald Hatcher "Why Formal Logic is Essential for Critical Thinking," *Informal Logic* 19 (1999), pp. 77-89.

[20] Rejection of this view is the burden of my "Fallacies not fallacious: Not!", *op.cit.*

[21] I have railed against this view a number of times: "Charity, Interpretation, Fallacy" in *Philosophy and Rhetoric* 29 (1996): pp. 329-343; "Fallacies and Alternative Interpretations" in *Australasian Journal of Philosophy,* 74 (1994): pp. 271-282.

Jonathan E. Adler
Department of Philosophy
Brooklyn College and The Graduate School
City University of New York