IGNORING QUALIFICATIONS (SECUNDUM QUID)
AS A SUBFALLACY OF HASTY GENERALIZATION

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In the experience of teaching courses on informal logic and argumentation, one finds that the fault of being overly rigid and absolutistic in thinking, of being too insensitive to the defeasible nature of much ordinary reasoning, is an important type of error. In a critical discussion, it is important for an arguer to be open to refutation, to admitting her argument was wrong, should convincing evidence be brought forward by the opposing side. It would be nice to have a name for this general type of failure in argument, and for the subfallacies or special failures that come under it.

The idea of neglecting qualifications, or legitimate exceptions to a plausible generalization in a particular case, is a clear and simple kind of failure that covers this gap. It is quite generally clear to students, from their personal experience, at least in general, what kind of error this is.[1]

On some accounts, the traditional informal fallacy of *secundum quid* (originally from the Aristotelian fallacy *para to pe* , meaning 'in a certain respect')[2] fills this bill, referring to the fault of not paying attention to qualifications that would invalidate the use of a general proposition in a particular case. For example, in the *Dictionary of Philosophy* (Runes, 1964, p. 287) we find:

> *Secundum quid:* (Lat.) Relatively, in some respect, in a qualified sense; contrasted with *simpliciter,* absolutely. - V.J.B.
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> Secundum quid, or more fully, *a dicto simpliciter ad dictum secundum quid,* is any fallacy arising from the use of a general proposition without attention to tacit qualifications which would invalidate the use made of it. A.C.

So far, so good. But the problem comes in when we consult the logic text-

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[1] Generally, the goal of instruction in informal logic should be to use, and at the same time improve on, the already existing skills of the students in argumentation, by helping them to 'look twice' at arguments that should be open to critical questioning.

[2] Hamblin (1970, p. 28).

books, and see this type of error mixed in with a lot of other kinds of logical errors and faults of various kinds, under the heading of 'accident', 'hasty generalization', 'converse accident', 'leaping to a conclusion', and so forth.([3]) The textbooks not only disagree with each other, showing a great proliferation of terms and classifications, but they introduce abstract terms like 'essence' and 'accident' that sound not only obscure, but also bizarre and antiquated, to current students.

As someone who has been struggling to teach informal logic courses for over twenty years, my own experience was discomfort in dealing with this particular subtopic because of the bewildering variety of terminology and different classifications of subfallacies in the textbooks. Trying to explain the historical origins of unfamiliar and puzzling terms like 'accident' and 'converse accident' seems a hopeless and unrewarding task, not to mention the variety of Latin terms and phrases peppered through the traditional textbook treatments. While ignoring exceptions to a rule or qualifications to a generalization did seem important failures to warn students about, nevertheless the complications and puzzles inherent in the standard treatment suggested that it was prudent to bypass this area, restricting coverage to a brief mention of the basic fault, in simple terms.

The confusing state of the textbook treatments of *secundum quid* cannot be blamed on the textbook writers. The cases they either invented or cited from earlier traditions were often good illustrations of common and important errors of reasoning. And their comments and analyses were often helpful and revealing, sometimes even innovatively advancing well beyond any existing logical theory.

1. *Terminology and classification*

One unfortunate aspect of this area of fallacies is the failure of agreement to arrive at any standard system of terminology and classification. In many textbooks, the umbrella term 'hasty generalization' is used to cover three types of failures of argument: (1) inductive or sampling failures, like arguing from too small a sample, or an unrepresentative sample([4]); (2) presumptive failures, involving neglect of qualifications, or overlooking excep-

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([3]) Ibid., pp. 28-31 and 45-47.

([4]) Ibid., p. 46.

tions(⁵); and (3) straightforward cases of overlooking new information in dynamic reasoning, like the raw meat case outlined in section 3 below. In other textbooks, the term 'hasty generalization' is used to refer to one or two of these failures, while some other term is used to refer to the other(s).(⁶)

   Still other textbooks introduce other terminology to label these faults, or other related faults. One common label is 'jumping to a conclusion'.(⁷) This term is sometimes used, more narrowly, to refer to one or more of the three faults above, listed under hasty generalization. But very often it is used in a much broader and more sweeping fashion to refer to any logically weak or insufficiently supported argument. Such a failure could refer to virtually any type of argument that is faulty because the premises fail to give enough support to the conclusion. It could be a weak (invalid) deductive argument, or a weak (insufficiently supported) inductive argument, for example.

   Once the terms 'accident' and *secundum quid* are blended into this terminological mixture, the result, in the textbook treatments, is generally confusing and disorienting. Imagine the student being introduced to this subject who begins by consulting several different textbooks on *secundum quid* or hasty generalization. It would not be an encouraging experience. The sheer diversity of terminologies prevents one from even beginning to speak about these fallacies in a coherent and orderly way, never mind trying to build up some basic knowledge on what the fallacies are.

   Surely a first step is to clearly distinguish between the inductive/statistical failures of argument, which might perhaps more properly be called 'hasty generalization', or something of the sort, and the presumptive failures of argument that have to do with neglect of qualifications.

   Some textbooks treat hasty generalization as pretty well exclusively a failure of inductive generalizations, which is essentially an inductive/statistical fallacy. Fearnside and Holther (1959, p. 13) define the fallacy of *hasty generalization* as follows. For this same fault, they also use the label 'jumping to conclusions', which they take to be equivalent.

> The fallacy of generalization from too few cases consists in drawing a general conclusion on the basis of an experience with particulars, which

(⁵)Ibid., and see also the textbook treatments cited below in this section.

(⁶) See also the survey in Bueno (1988), and remarks on terms.

(⁷) Fearnside and Holther (1959, p. 13).

> statistical science shows to be insufficient in view of the size of the unit
> examined, or, as pollsters say, the 'population'. Even where there is a
> lack of time or money to prepare a proper actuarial survey, there is no
> excuse for ignorance about the minimum size of the sample - the man
> who talks to a few people in his office and to his neighbors and then
> makes a bet on a presidential election deserves to lose the bet.

Under the same heading of hasty generalization, Fearnside and Holther (p.
14) also include inductive inferences that fail because the sample is not
representative of the population from which it was selected.

In Walton (1989, pp. 206-208), the two criticisms of insufficient and
biased statistics are treated as referring to distinctive types of errors of
inductive reasoning in their own right. They are not classified under an
umbrella term like 'hasty generalization'. However, as long as the term is
being used clearly and consistently, it would not appear to be objectionable
to use it, or some equivalent term, for this purpose. I would prefer not to
use the term 'jumping to a conclusion' for this purpose, however, for it
suggests something much too broad, as a type of failure. And indeed, it will
be shown in section 8 below that many of the major informal fallacies can
be classified under that heading, as presumptive leaps.

Another text (Salmon, 1984) treats several different fallacies under the
general heading 'Fallacies Associated with Inductive Generalizations', while
stating 'this fallacy has been called *the fallacy of insufficient statistic,* hasty
generalization, or leaping to a conclusion'(p. 58). Salmon (pp. 58-59) offers
two examples.

> If a friend snaps at you when you ask a question, you would be commit-
> ting the fallacy of hasty generalization if you argued that this one in-
> stance of unfriendly behavior showed that he was no longer your friend.
> If you conclude that no one likes turnips because none of your friends
> do, this too would be a hasty generalization. The psychological reasons
> for leaping to a conclusion are fairly obvious in these cases. In the first,
> hurt feelings may color your judgment; in the second, personal knowl-
> edge of opinions of friends may obscure the fact that they are only a
> small part of the population. To avoid this fallacy, we must dispas-
> sionately take account of the size of the sample before we draw any
> conclusion from it. If feelings are not the issue, and, instead, there is
> an inadequate amount of appropriate background information on which
> to judge whether a sample is large enough, we should try to acquire the

information. If this is not possible, it would be advisable to suspend judgment on the conclusion.

The turnips case does seem to be an inductive failure that can be analyzed very well by pointing out that the generalization was based on too small a sample.

However, the problem is that this same kind of inductive failure is not a convincing analysis of what is wrong with the argument in the snapping friend case. Friendship is a presumption based on trust, and a basis for normal expectations on how a person will act on the presumption that he or she is your friend. However, not all situations are normal, and in some cases, a friend will behave in an unexpected way that may seem to run counter to the presumption of friendship. If a friend snaps at you, in a particular case, however, it does not necessarily signal the end of the friendship. Perhaps the case is exceptional, and there is a reason or explanation for this ostensibly unfriendly behavior. Along these lines then, a case can be made out that the failure in the snapping friend example is not an inductive fallacy of insufficient statistics, but a *secundum quid* type of failure to take exceptional circumstances into account in presumptive reasoning.[8]

Another text (Engel, 1982) seems, at least initially, to do better on the job of classification by distinguishing between two types of faults in arguments - the inductive type of failure and the presumptive type of failure of ignoring exceptions. According to Engel's account (p. 105), "the *fallacy of sweeping generalization* is committed when a general rule is applied to a specific case to which the rule is not applicable because of the special features of that case". This type of failure appears to correspond to *the secundum quid* type of presumptive fallacy of ignoring qualifications. The examples given by Engel bear out this interpretation.

Case 1: Everyone has a right to his or her own property. Therefore, even though Jones has been declared insane, you had no right to take away his weapon.

Case 2: Since horseback riding is healthful exercise, Harry Brown ought to do more of it because it will be good for his heart condition.

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[8] Rescher (1976) supports our presumption that presumptive reasoning is a different kind of reasoning from inductive reasoning.

Both are classic cases of the traditional (Aristotelian) fallacy *of secundum quid.*

   Using a separate classification, Engel (p. 108) characterizes the fallacy of hasty generalization in a way that makes it initially appear to be an inductive error of generalizing on the basis of a single instance, or too small a sample. The example given (p. 108) is the following case.

Case 3:   I had a bad time with my former husband. From that experience I've learned that men are no good.

But the problem with this case is that it is not too clear whether the argument is supposed to be an inductive generalization, based on a sample, or a presumptive generalization, based on a (supposedly) typical case.[9]

   In fact, a closer look reveals that Engel is, apparently, not making the distinction on an inductive versus presumptive basis at all, but on a basis of the direction of argumentation. In the fallacy of sweeping generalization, the argument goes from general rule to specific case. In the fallacy of hasty generalization (p. 108), "an isolated or exceptional case is used as the basis for a general conclusion which is unwarranted". Cases 1 and 2 are instances of the fallacy of sweeping generalization then, according to Engel, whereas case 3 is an instance of the fallacy of hasty generalization.

   This way of making the distinction turns out to be not too helpful.[10] Indeed, another example offered by Engel as a case of the fallacy of hasty generalization, is nothing of the sort. This case comes from a Sherlock Holmes story where Holmes is introduced to Dr. Watson for the first time, and reasons that Watson must recently have been in Afghanistan.

Case 4: Here is a gentleman of a medical type, but with the air of a military man. Clearly an army doctor, then. He has just come from the tropics, for his face is dark, and that is not the natural tint of his skin, for his wrists are fair. He has undergone hardship and sickness, as his haggard face says clearly. His left arm has been injured. He holds it in a stiff and unnatural manner. Where in the tropics could an English army doctor have seen much hardship and

   [9] This confusion is itself the basis of one variant of the secundun quid - see section 10 below.

   [10] Bueno (1988) supports our contention, also argued for in greater detail below, that this way of making the distinction between two types of fallacy is not helpful.

> got his arm wounded? Clearly in Afghanistan. ('A Study in Scar-
> let', pt.1, ch. 2).

Engel's analysis of case 4 is that Holmes is 'guilty of a hasty generalization founded on insufficient evidence' (p. 110), because Watson could have had the air of being a military man without ever having been in the army, or he could have a tanned face while remaining in England. All these things are possible, but to cite them as evidence that Holmes has, in this case, committed a fallacy of hasty generalization is setting too high a standard for Holmes to meet. Admittedly, Holmes' conclusion was only a conjecture, a guess based on expectations and normal patterns which might not have been applicable to this particular case. But does that mean that Holmes committed a fallacy by making the guess, and advancing such a presumptive, but fallible conclusion?

The answer, judging from what we know of the (fictional) context of case 4, is no. Holmes should not, in the circumstances, be convicted of having committed a fallacy of hasty generalization. Indeed, you could say that such an accusation is itself a case of the *secundum quid* fallacy, characterized by portraying someone's argument in an overly rigid way. To say that Holmes' argument was fallacious because he could possibly have been mistaken is to insist, unsympathetically and unfairly, that Holmes' argument must be interpreted as a deductively valid argument, or perhaps a very strong kind of induction.

But far from that, Holmes' argument was evidently meant to be a clever guess, a plausible conjecture based on presumptive reasoning. And as such, at least as far as we are told in the story, it turned out to be a good argument of that type.

Engel's treatment of case 4 as a fallacious argument on grounds that it is deductively invalid shows graphically the general failure in logic textbooks to acknowledge that presumptive reasoning can be a legitimate type of argumentation in its own right. Small wonder the textbook treatments of the fallacy of *secundum quid* lack any kind of theoretical basis for arriving at an adequate understanding of this fallacy.

2. *Accident and converse accident*

The most widely used logic textbook, Copi and Cohen (1990, p. 100), follows a common practice among many textbooks of treating what is essen-

tially the fallacy of *secundum quid* under the heading of two fallacies, called 'accident' and 'converse accident'. Both fallacies are said to arise through the careless, or 'deliberately deceptive' use of generalizations (p. 100):

> In political and moral argument, and in most affairs of importance in community life, we rely upon statements of how things generally are, how people generally behave, and the like. But, even when general claims are entirely plausible, we must be careful not to apply them to particular cases too rigidly. Circumstances alter cases; a generalization that is true by and large may not apply in a given case, for good reasons having to do with the special (or 'accidental') circumstances of that case. When we apply a generalization to individual cases that it does not properly govern, we commit the *fallacy of Accident.* When we do the reverse, and carelessly or by design, apply a principle that is true of a particular case to the great run of cases, we commit *the fallacy of Converse Accident.*

Copi and Cohen use several of the standard examples, in their brief (equivalent to one page) treatment, characterizing the basic fallacy as follows: 'Almost every good rule has appropriate exceptions; we argue fallaciously when we reason on the supposition that some rule applies with universal force.' This is in fact quite a good capsule characterization of the basic fault behind the fallacy of *secundum quid,* or ignoring exceptions.

The two questionable aspects of Copi and Cohen's otherwise helpful treatment of this fallacy are: (1) their terminology - using 'accident' instead of 'ignoring qualifications' - a practice that is neither historically justifiable nor helpful to students as indicative of the fault ([11]), and (2) their emphasis on distinguishing between the converse and direct (nonconverse) variants of the fallacy.

The example Copi and Cohen give of the fallacy of direct accident is said to be fallacious (p. 100) on the grounds that it is a rule that has appropriate exceptions. The fallacy is reasoning on the supposition that the rule has universal force.

Case 5: The rule that hearsay testimony may not be accepted as evidence in court is not applicable when the party whose oral communica-

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([tt]) According to Bueno (1988) this practice is followed in the Anglo-American tradition, but not in the Continental tradition of fallacies.

tions are recorded is dead, or when the party reporting the hearsay does so in conflict with his own best interest.

But what exactly is the fallacy here? Is it the following kind of inference?

> It is a rule that hearsay evidence may not be accepted as evidence in court.
> This statement is hearsay evidence.
> Therefore, this statement *cannot* be accepted as evidence in court (even though the person who made it is dead).

If so, the fault is an instance of the fallacy of direct accident, according to Copi and Cohen, because the inference goes from the general rule to the conclusion of a specific case.

But what is the problem in this case? Surely a significant part of the problem is that the rule in the major premise is being interpreted in too strict a way - as Copi and Cohen put it, 'with universal force' - so that the legitimate exception is being (unreasonably) excluded.

If this is right, then the direct-converse distinction is really not all that significant, because it is basically the same kind of problem of ignoring qualifications to a general rule or principle that is the root fault in the converse type of case as well. The example Copi and Cohen give of the fallacy of converse accident (p. 101) concerns the following type of inference.

Case 6:   Drug x in dosage y has beneficial effects for the health of patient z in circumstance C.
Therefore, plenty of drug x is good for anyone in all circumstances.

This type of inference goes from the particular premise to the generalization as a conclusion. Hence for Copi and Cohen, it commits the fallacy of converse accident, as opposed to direct accident.

But is this distinction very significant when it comes to identifying and analyzing the basic problem inherent in this kind of inference as a species of fallacy? It would appear not, for the basic problem that is really all that needs to be identified and analyzed is the ignoring of the role of exceptions, of the defeasible nature of the generalization, in so arguing.

However, if you look over some of the cases, it is not hard to appreciate

why the textbooks have found it plausible to classify between the direct and converse categories. Cases 1 and 2 are classified as instances of sweeping generalization by Engel, and would presumably be classified as instances of direct accident by Copi and Cohen, because the argument goes from a general premise to a specific conclusion that describes a single instance. In contrast, case 3 is classified as an instance of hasty generalization by Engel, just as case 6 is classified as an instance of converse accident by Copi and Cohen, because these arguments go from a premise describing a single case to a general conclusion containing the word 'all'.

Whatever you call the fallacy or fallacies - *secundum quid,* accident, hasty or sweeping generalization, etc. - it does seem to make some sense to observe that the inference contained in it can go either way - from the general statement to the specific case, or vice versa.

Sometimes an inference can go both ways as well, in a given case. Suppose, for example, it has been found, in general, that aspirin is good for patients with heart disease, but bad for patients with stomach problems.

Case 7: Taking aspirin has been good for John, who has heart disease.
Therefore, taking aspirin is good for anyone who has heart disease.
Susan has heart disease and ulcers.
Therefore, taking aspirin will be good for Susan.

In this case, the inference from the first premise to the first conclusion was a case of direct accident or hasty generalization (going from a single case to a generalization). But then the inference from the first conclusion, taken together as a premise with the next premise, made up an argument that is a case of converse accident or sweeping generalization (going from a generalization to a specific conclusion).

In this case, you could say that the argument is a chain of inferences or subarguments, and the one subargument is a case of direct accident, the other a case of converse accident. But such an observation is not the main thing, or the key factor that identifies the argument, as a whole, as an instance where the fallacy of *secundum quid* (or whatever you choose to call it) has been committed. The main thing is that the argument, in general, is faulty because, or to the extent that, the susceptibility of the generalization to exceptions has been ignored or suppressed. The main thing is that the general statement that aspirin is good for people with heart disease is a defeasible presumption, a rule of thumb that is highly sensitive to certain

kinds of exceptions. To draw conclusions from it, while interpreting it in a rigid or absolutistic way, could be to commit quite a serious kind of error.

The conclusion of this discussion seems to be that the direct-converse distinction does have some legitimate basis, or role to play, in the presentation of *secundum quid* (or whatever name you choose for it) as a kind of fallacy. But it would be a mistake to lay too great a stress on the direct-converse distinction as being essential, or even very important, in identifying and analyzing the fallacy. The fallacy basically involves a failure to recognize the defeasible nature of generalizations, and to draw faulty conclusions by inference using a wrongly interpreted generalization, no matter whether the generalization functions as a premise or as the conclusion of the inference.

The fallacy of *secundum quid* is associated with an attitude of rigidity or dogmatism that confuses two different types of generalizations in a given case, resulting in the drawing of an incorrect inference. The one kind of generalization could be called the *universal (absolute) generalization,* a type of generalization that does not admit of exceptions. One counter-instance falsifies (refutes) it. This type of generalization is represented by the universal quantifier and the strict (material) conditional, in the general form: $(\forall x)(Fx \Rightarrow Gx)$, where x is an individual variable and F and G are predicate variables. The other type of generalization is the *defeasible (presumptive) generalization,* a type of generalization that admits of exceptions, and is compatible with some new arguments that turn up counter-instances. This type of generalization is not strict, but is openended and tentative in nature. In section 6, it is shown that the formal properties of the logical reasoning involved in these two types of generalizations are different in a clearly definable way.

3. *The raw meat example*

A very common and typical example of the fallacy of *secundum quid* given by the logic textbooks is the following inference, with two premises: `What you bought yesterday, you eat today; you bought raw meat yesterday; therefore, you eat raw meat today. According to Hamblin (1970, p. 29), this example first appeared in the twelfth-century *Munich Dialectica,* and is an interesting, and entirely typical illustration of the ossification of the traditional treatment of fallacies in modern times...' Usually treated as an example of the *secundum quid* fallacy, this same inference has also been

classified under the heading of the fallacy of accident by many textbooks.

For example, according to Whately (1836, p. 183), the inference is an instance of the fallacy of accident *(fallacia accidentis)* because the major premise' signifies something considered simply in itself (as to its substance merely), whereas the minor premise 'implies that accidents are taken into account', in regard to 'conditions and circumstances'. Whately's account of what is supposedly wrong sounds like he has a point, but has not succeeded in applying to the example in a specific enough way to be very convincing.

DeMorgan (1847, p. 251) cited the same example as an instance of the fallacy of *secundum quid,* commenting that it was "raw when Reitsch mentioned it in the *Margarita Philosophica* in 1846, found in the same state by Whately in 1826, and has remained uncooked, as fresh as ever, a prodigious time". Little appears to have changed, in this regard, since 1847. Many twentieth-century texts continue to use the example, though their diagnoses of the supposed error differ.

In the form it is put by Cohen and Nagel (1934, p. 377), the fallacy of accident appears to be a failure of dynamic reasoning, in the sense that it is a failure to take new information into account. Using the raw meat example, they cite the fault as the failure to take into account 'that the meat has grown older' during the inference, a fact that may have introduced significant changes.

> The *fallacy of accident* (also called *a ditto simpliciter ad dictum secundum quid*). It is illustrated by the argument: You eat today what you bought yesterday and you bought raw meat yesterday; therefore you eat raw meat today. The two assertions do imply that the meat which was raw and bought yesterday is eaten today, but not that it is eaten raw. The particular form in which we eat it is not implied in the premises. In other words, the adjective which characterizes the condition of the meat when bought does not apply necessarily to the form in which we eat it. The premises of our argument do not, for instance, preclude the fact that the meat has grown one day older between the two operations.

According to this account, the argument in question has the form of an inference, with two premises.

> You eat today what you bought yesterday.
> You bought raw meat yesterday.

Therefore, you eat raw meat today.

What is wrong with this inference? The answer is that it overlooks the possibility that new information may have come in, i.e. the condition of the meat may have been changed between the purchase and consumption stages.

In fact, this change is more than just a possibility. In the given circumstances, it is the normal practice for us to cook meat before eating it (subject, perhaps, to unusual or exceptional cases). In other words, an nonexplicitly stated third premise can plausibly be added to the inference.

Normally (subject to exceptions) meat is cooked before it is consumed. Adding this premise, the former conclusion is rebutted or cancelled, and its opposite is derived.
Therefore, you eat cooked meat today.

Hence the original inference is faulty because it overlooked new information that came into the situation between the buying of the meat (expressed in the one premise) and the eating of the meat (expressed in the other premise). In this instance, the information was tacitly conveyed in context. The context suggests that normally the practice is to cook meat at some point between the buying stage and the eating stage.

Overlooking this covert premise could be called a kind of fallacy or failure of reasoning. However, the failure in this case is not exactly the same fault as the main type of *secundum quid* fallacy, which is to construe a defeasible statement too rigidly and overlook legitimate exceptions. In this case, the fault is to overlook a whole (defeasible) premise altogether. It is the fault of overlooking a change that has (likely) come into the situation, given presumable, nominal practices known to exist in that type of situation. Here the fault is not being overly rigid, or interpreting a defeasible statement in an (unfairly or unreasonably) rigid way. It is overlooking the whole defeasible statement altogether.

Hence the raw meat case is clearly related to the *secundum quid* fallacy. But it is, if anything, a special case of it, and not the typical or standard type of error that characterizes this fallacy. The standard case would look something like this.

You bought raw meat yesterday.
Raw meat is always (without exception) cooked after it is bought and before it is consumed.

> You eat today what you bought yesterday.
> Therefore, you eat cooked meat today.

The fallacy in this type of case would occur where the proponent of the argument above insists that the argument is deductively valid and that the premises are true, and therefore that the respondent must accept the conclusion. This would be a type of case where the proponent interprets the conclusion as expressing the proposition, 'It is not possible that you did not eat cooked meat today.' In such a case, the proponent allows the respondent no further room for asking critical questions or claiming exceptions exist in his case. The fallacy, in such a case, relates to the overly rigid (dogmatic) posture of the proponent, in not allowing for any discussion of possible exceptions or special circumstances.

In this second kind of failure, the fault is also one of overlooking or barring new (and relevant) information. But it is the way the information is excluded, by an overly rigid interpretation of the second (general) premise, that is the key fault.

The failure in the first inference was different. It was the fault of overlooking the general premise altogether, and thereby arriving at a conclusion that is the opposite of the one that should really be drawn.

The classic raw meat example, and some of the other examples used in the textbooks, do provide some good cases for discussion and analysis. The textbook treatments suggest that the fallacy of *secundum quid* is basically a very interesting and pervasive type of error of argumentation, well worth exploring. However, the textbook treatments also show basic disagreements on what the fallacy is, on how it should be named and classified, on what its relationships to neighboring fallacies are, and on how it should be analyzed as some identifiable type of argument that is incorrect.

How did the textbooks ever get into this highly confusing state of affairs? As usual with the major fallacies, finding the answer means going back to Aristotle (or perhaps even further back, as will be seen in section 9 below).

4. *Aristotle's account*

Near the beginning of *On Sophistical Refutations,* Aristotle listed seven kinds of fallacies connected with language. The first one is called it 'accident', and the example Aristotle gives is puzzling: "If Corsicus is different from 'man', he is different from himself, for he is a man." (168b33-

168b34). It is puzzling in the sense that it is not clear exactly what the error is, and not convincing that this is a common or important error in everyday reasoning. Aristotle's general account of this alleged fallacy is none too straightforward either.(12)

> Fallacies connected with Accident occur when it is claimed that some attribute belongs similarly to the thing and to its accident; for since the same thing has many accidents, it does not necessarily follow that all the same attributes belong to an the predicates of a thing and to that of which they are predicated (166b29-166b33).

This pattern might appear to fit an inference like the following: this desk is brown; brown is a color; therefore this desk is a color. But why this type of faulty inference represents some kind of tricky or common, persuasive error of argument worth designating as a fallacy is simply not obvious.

The second kind of fallacy listed by Aristotle is 'those [kinds of argument] in which an expression is used absolutely, or not absolutely but qualified as to manner or place or time or relation' (166b25). An example (167a12-167al4): "The Ethiopian is black; the Ethiopian has white teeth; therefore the Ethiopian is both black and not black." The problem here is that the Ethiopian is black generally, but white in one particular respect. The problem, clearly an important kind of error, lies in the failure to distinguish between a thing having a property absolutely (generally), and its having a property in one particular respect.(13)

Aristotle, much later in *On Sophistical Refutations* (180a23-180b4l), showed clearly how this kind of problem is an important type of fallacy or confusion in reasoning, and distinguished between the two kinds of statements that can appear as premises or conclusion of the associated arguments. One is the general type of statement that is meant to be held or taken 'absolutely', with no qualifications attached. The other is the statement that is alleged to be true only 'in certain respects', that is, true in particular

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(12) Bueno (1988) agrees, showing that Aristotle's account of the fallacy of accident is unclear and confusing to begin with, leading commentators to many different conflicting theories and attempted analyses.

(13) Hamblin (1970, p. 208) suggests that a formal logic of the adverbs 'wholly' and 'partly' is 'not difficult to build'. He then actually does sketch out the foundations for such a logic (pp. 209-211), which would formally show Aristotle's example of the Ethiopian to be a fallacy, based on a confusion between two types of adverbial attribution.

circumstances, relative to a particular time, place, degree or relation, and not 'absolutely' true. The problem is that if these two types of statements are confused in the same argument, a fallacy can arise - the argument can superficially appear to be valid when it really is not.

   Aristotle offers many examples that clearly and convincingly represent common, important kinds of errors. One is the following: '...there is no reason why the same man should not be absolutely a liar yet tell the truth in some respects, or that some of a man's words should be true but he himself not be truthful' (180b7-180b8). The danger here, for example, is taking the following type of argument to be generally valid or correct.

> Bob is a liar.
> Bob said A is true.
> Therefore, A is false.

Or, the opposite mistake could be in taking the following kind of argument at face value.

> Bob said A.
> A is true.
> Therefore, Bob is truthful.

The problem with the second inference is that Bob may have just hit on something true here inadvertently, yet, in general, he may be a congenital liar. Or Bob may be honest or accurate about some things, but generally unreliable and mendacious as a source. The problem is with the first inference. Even though Bob is generally a liar, there may be good reasons to think he has told the truth in some particular case.

   Another interesting type of case Aristotle considers (180b9-180b14) concerns a statement that is true at a general level of abstraction but may be false when applied to a particular case.

> Is health (or wealth) a good thing? But to the fool who misuses it, it is not a good thing; it is, therefore, a good thing and not a good thing. Is health (or political power) a good thing? But there are times when it is not better than other things; therefore the same thing is both good and not good for the same man. Or is there no reason why a thing should not be absolutely good but not good for a particular person, or good for a particular person, but not good at the present moment or here?

Here, the same kind of problem is apparent. Wealth is generally a good thing. But used badly in particular circumstances by a particular person, that wealth may not be a good thing for that person.([14]) Here Aristotle notes that this problem even seems to violate the law of non-contradiction: "... the same thing is both good and not good for the same man". He is aware it is a serious logical problem, and even a serious foundational problem that could give some at least potentially legitimate grounds for denying the law of non-contradiction.

At the very beginning of this whole passage on statements true in a particular respect, Aristotle does offer a general solution to the problem of how to deal with arguments where this type of difficulty arises. According to Aristotle's account, the problem arises where, through a kind of confusion, what appears to be a genuine refutation, is not. What he means by 'refutation' is an argument that has been used by one participant in a dialogue to refute or 'go against' the contention of the participant on the other side.

The problem arises, in such a context, where in the one premise of the refutation, the predicate belongs to the subject absolutely, whereas in the other premise, the predicate belongs to the subject only 'in a particular respect', i.e. non-absolutely. So far, the problem may be simply a confusion. But it becomes a fallacy when the participant to whom the refutation was directed fails to detect the key difference between the two premises, and (erroneously) takes the argument as a real refutation, when in fact it is not. Thus the fallacy is a kind of illusion or trick.

How did Aristotle propose to deal with this kind of problem? It is quite clear from his remarks (180a23-180a31) that he did, in effect, propose a kind of practical method that could be used by someone who wants to detect this type of fallacy in a given argument.

> Arguments which turn upon the use of an expression not in its proper sense but with validity in respect only of a particular thing or in a particular respect or place or degree or relation and not absolutely, must be solved by examining the conclusion in the light of its contradictory, to see if it can possibly have been affected in any of these ways. For it is impossible for contraries and opposites and an affirmative and a negative to belong absolutely to the same subject; on the other hand,

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([14]) This is a typical kind of case where practical reasoning is used to infer from abstract principles to particular circumstances and vice versa. See Walton (1990) for a general account of this kind of reasoning.

> there is no reason why each should not belong in a particular respect or relation or manner, or one in a particular respect and the other absolutely. Thus if one belongs absolutely and the other in a particular respect, no refutation has yet been reached. This point must be examined in the conclusion by comparison with its contradictory.

Aristotle's method is to start by examining the conclusion of the argument used as a refutation in a context of dialogue. You must "examine" the conclusion "in light of its contradictory" to see if it can be affected by this sort of problem. Is the conclusion meant to be true absolutely, or only in certain respects? Having determined this, then you have to look back at the relevant premises and ask the same question about them. If there is a disparity here - for example, if the conclusion is supposed to be true absolutely, whereas a premise required to get to this conclusion is only true in a certain respect - then the conclusion will have to be withdrawn. In such a case, the argument fails, and "no refutation has yet been reached".

Aristotle's analysis of the fallacy is excellent in two respects especially. First, it is a general analysis of the type of error involved, and not tied to any specific situation of use or calculus. He is saying that you have to look at each particular case on its merits, and scan it by first looking at the conclusion, asking: 'Does the predicate belong to the subject absolutely, or only in a particular respect? ' Having answered this question, next you need to scan over the premises and ask it again. Thus Aristotle's test is to take any given argument and 'think twice' about it, to see if it fails because of the ambiguity between these two types of predication.

Second, Aristotle's analysis is excellent because it reveals the deep, underlying import of this fallacy for logic as a subject. Failure to recognize the fallacy means that in the practice of dealing with arguments, you could be violating the law of non-contradiction. Because, in practice, it is possible for something to have a property generally, but fail to have that property in some particular respect, the fault of not being attuned to this distinction means that you will be open to refutation on grounds of contradicting yourself in some cases.

In short, Aristotle did an excellent job of explaining what this fallacy is, by giving good examples of it, by giving a clear analysis of its theoretical basis, and by giving a practical test to detect the existence of the fallacy in particular cases.

Evidently the problem began with the later Greek commentators on Aristotle, who began to mix Aristotle's fallacies of *secundum quid* and accident

together.([15]) Moreover, what Aristotle wrote on the fallacy of accident was found to be highly abstruse, leading ultimately, in the middle ages, to deep metaphysical controversies on 'essence' and 'accident' among the leading logicians of the time.([16]) The initially clear Aristotelian fallacy of *secundum quid* was mixed into this melee, and the treatments of this fallacy in the textbooks never recovered from the ensuing confusion (with only a few exceptions).

5. *Historical developments*

The history of the fallacy of *secundum quid* is a tortured trail. It starts out with the clear account of a readily recognizable type of common error in everyday reasoning given by Aristotle in *On Sophistical Refutations.* From there, things went badly. In subsequent textbooks, for the next two thousand years, this fallacy somehow got lumped in with the other Aristotelian fallacy called *accident.* Accident is not so much a fallacy in the sense of a common error of reasoning. It could perhaps better be described as a paradox or series of puzzles, a general category for a family of quite subtle types of errors or problems of reasoning. Whatever accident is, it is far from clear that it is the kind of common error of reasoning or fallacy that belongs in the standard treatment of fallacies in logic textbooks (especially textbooks meant for general reading by non-specialists and introductory students). Even worse, the already obscure fallacy of accident became more and more convoluted and abstruse as variants, like 'converse accident' were added, each of these variants having an impressive-sounding Latin name.

   As if this wasn't bad enough, *secundum quid* was also treated, especially in the modem textbooks, as being the same as, or a subspecies of, what was described as an inductive/statistical error, the so-called fallacy of 'hasty generalization', also known as 'leaping to a conclusion', 'inadequate statistics', 'over-generalization', and so forth. This further confused matters, because the original *secundum quid* fallacy, as described by Aristotle was clearly something distinctively different from the inductive error of concluding to a generalization on the basis of too small a sample (often called the

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([15]) See Ebbesen (1981), Back (1987), and Bueno (1988).
 ([16]) Ibid.

fallacy of insufficient statistics).(17)

The original fallacy of *secundum quid* described by Aristotle was quite a simple basic idea - it was simply the error of neglect of qualifications. However, as the logic textbook treatments evolved, through the middle ages and into the modern period, descriptions of this fallacy had become so complicated and obscure that the original idea was buried in all sorts of abstruse philosophical theorizing about 'essences', 'accidental properties', and the like. Not surprisingly, the whole category of *secundum quid* fell into disuse, for all practical purposes. And today this phrase, or the category of fallacy it represents doesn't seem to really mean much of anything to anybody, as part of common language.

An important development historically was that Aristotle's rather abstract and perplexing account of the so-called fallacy of accident led to a variety of different interpretations among subsequent generations of commentators on Aristotle's works. This led to considerable controversy in the middle ages on the subject of accident, and also to the construction of complex metaphysical theories concerning accident, with the introduction of abstruse, scholastic terminology.

As noted in section 4, what Aristotle said about accident as a fallacy in *On Sophistical Refutations* is puzzling, in that its practical import for the study of fallacies is unclear. According to Back (1987, p. 139), Aristotle held a fundamental logical principle in his *Categories and Prior Analytics* called the *dictum de omni,* which says in modern terms that the predicates of the predicates of a subject are predicates of that subject. An apparent counter-example, or at least problem for this principle is the case of the man who is coming towards us with his face covered (*On Sophistical Refutations* 179b3-179b8): "...if I know Corsicus but I do not know the man who is coming towards me, it does not follow that I know and do not know the same man." The Greek commentators on Aristotle saw the problem as one of adding some "qualifying phrase" to the *dictum de omni* that would rule out the counter-example. According to Back (1987, p. 139), an interpretation common to these commentators was to add the qualification that there must be an essential connection between the terms in the *dictum de omni* principle. Hence in subsequent discussions of accident in the middle ages, the discussion of the fallacy of accident had become strongly tied in with the doctrine of essential and accidental properties.

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(17) Hamblin (1970, p. 46) supports this contention.

In Boethius' view (Gelber, 1987, p. 111), the *dictum de omni* had efficacy only in cases of essential predication. In the *De Fallaciis,* attributed to Aquinas, an even more complex solution was worked out that involved three different kinds of predication (Gelber, 1987, p.112). Following these developments, other leading medieval philosophers worked out theories of accident, engaging in running controversies on the subject with their predecessors and contemporaries.

According to Bueno (1988, pp. 17-19), there was also a Byzantine interpretation of the fallacy of accident associated with two commentaries on Aristotle's *On Sophistical Refutations* written by Michael of Ephesus during the 1120s and 1130s. This interpretation forgot or ignored the discussions of accident in late antiquity, and launched into a quite different analysis that made the fallacy seem similar to equivocation (Ebbesen,1981, pp. 224-227). According to this analysis, we need to distinguish between the subject considered in itself (as a universal) and the combination made up of the subject and its (nonuniversal) accident.

The three great medieval logicians, William of Sherwood, Peter of Spain, and Jean Buridan, all disagreed in their explanations of the fallacy of accident. In the middle ages then, the fallacy of accident produced what Bueno (1988, p. 21) calls "a bewildering variety of interpretations", leading the Aristotelian scholar Edward Poste (1866, p. 158) to conclude that the fallacy of accident "has been generally misunderstood".

This confusion was compounded by the Port Royal logicians, who struck out on their own, paying lip service to, but really departing from the medieval traditions, and who defined the fallacy of accident in a way that makes it indistinguishable from the fallacy of ignoring qualifications, or *secundum quid.* At this point, the initially clear and coherent Aristotelian fallacy of *secundum quid* was thrown into confusion and disarray by being systematically mixed in with the fallacy of accident, in the logic textbooks. The result can be seen in the modern treatments of Whately, DeMorgan and Mill.

The Port Royal account of the fallacy of accident given in Amauld (1662, pp. 259-260) is particularly disorienting, because it gives examples that seem more like mixtures of *secundum quid* with other fallacies.

> We commit [this] kind of sophism when we make an unqualified judgment of a thing on the basis of an accidental characteristic. This sophism is called *fallacia accidentis* by the Schoolmen. For example, people commit this fallacy when they deprecate the use of antimony on the

> ground that when misused antimony produces bad effects. This fallacy
> is also committed by those who attribute to eloquence all the ill effects
> it works when abused or to medicine all the faults of ignorant doctors
> (p. 259).

What is referred to here seems, at least partly, to be the *argumentum ad consequentiam,* or argument from consequences, a species of subpart of practical reasoning that argues from the goodness (or badness) of its consequences to the goodness (or badness) of a proposed course of action. This type of argument can be correct (though it is defeasible in nature). If a proposed action has bad consequences, for example, then, other things being equal, that is an argument against the action. However, the same type of argument can also be used wrongly, for example, in a case where good consequences that outweigh the bad are ignored or suppressed as relevant considerations.(18) You can see, however, that *secundum quid* is partly involved in such cases, where there has been a neglect of qualifications concerning consequences.

   The account gets even more disorienting when it seems to confuse the fallacy of accident with what is usually called the *post hoc* fallacy (p. 259): "Again we fall into this incorrect reasoning (accident) when we take as a genuine cause what is simply an occasion or circumstance."

   It is no doubt true that the *secundum quid* fallacy of ignoring qualifications is connected to argumentation from consequences, and also to causal argumentation, in important ways. Nevertheless it is very confusing to mix examples in together that seem primarily to commit errors that are related to these other two distinct types of argumentation, and call them cases of the "fallacy of accident". Given that the history of the subject had degenerated into this deep muddle, it is small wonder that the modern textbooks, which often do adhere in a doctrinaire way to tradition, often don't make much sense in their treatment of hasty generalization, accident, *secundum quid,* and related fallacies.

   One exception to the rule was a widely used textbook (Joseph, 1916) that gave a very clear, basically Aristotelian account of the fallacy of *secundum quid,* clearly distinguishing it from accident, and treating accident as a separate fallacy. Putting the question of accident aside, at least this one text went against the trend and preserved the basic test of Aristotle's original

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   (18) See Windes and Hastings (1965, pp. 223-235), and also the general account of practical reasoning in Walton (1990).

account of the fallacy of *secundum quid.* However, it was no use. Subsequent texts kept propounding the old, traditional treatment to new generations of students.

The only effective way to combat these entrenched traditions is to provide a clear analysis that really explains the error of *secundum quid* as a faulty kind of inference drawn from a confusing or transposing of two types of generalizations, universal and defeasible. But this task presupposes the prior task of explaining how presumptive generalizations function dynamically within presumptive reasoning.

6. *Nonmonotonic reasoning*

Deductive logic is *monotonic,* meaning that if you add a new premise to a deductively valid argument, the argument remains valid. Researchers in artificial intelligence have recently begun to pay a good deal of attention to nonmonotonic reasoning, because of their interest in practical reasoning, e.g. robotics, where a machine has to carry out practical, everyday tasks involving variable circumstances. Typically, practical reasoning is *dynamic,* meaning that new circumstances alter a case, and once the agent (knowledge base) is provided with the new information describing these circumstances, it may be 'logical' for the agent to infer a new conclusion, instead of the old one, concerning the reasonable course of action in the circumstances.

The classical case of nonmonotonic reasoning typically cited as an example (called the 'canonical example') is the following inference.

> Birds fly.
> Tweety is a bird.
> Therefore, Tweety flies.

Now suppose that Tweety is a penguin. It seems that both premises are true, but the conclusion is false. But that is impossible if the inference is deductively valid.

To solve this problem, the major premise is interpreted as a *default (defeasible)* proposition, meaning a proposition that can still be true (or at least hold plausibly), subject to legitimate exceptions that can exist without (necessarily) refuting it. Thus, according to Reiter, the major premise is best interpreted as a plausible reasoning pattern of a kind that is inherently open to exceptions. It is represented (Reiter, 1987, p. 149) by patterns like 'Nor-

mally birds fly', 'Typically, birds fly', or 'If x is a bird, then assume by default that x flies.' Such a proposition is defeasible, meaning that if, in a particular case, Tweety is a penguin, or an ostrich, or a bird with a broken wing, etc., then the general proposition can still hold.

   In non-monotonic reasoning then, a conclusion is subject to default if, in a particular case, new information comes in that makes it clear that the case is exceptional. Thus, suppose the train of reasoning in the inference just above has been carried out, but then a new premise is added.

   Tweety is a penguin.

And suppose that, as additional information, we know that a penguin is a type of bird that definitely does not fly. We have to conclude that the first inference is now subject to cancellation (default), and that the new conclusion to be derived (below) is the opposite of the original one.

   Therefore, Tweety does not fly.

But the whole train of reasoning was not simply contradictory or 'illogical' *per se.* It represented an advance of new knowledge about the particular circumstances of a case, that made us modify our findings. Once we learned that Tweety, in this case, was an exceptional type of bird with respect to flying - a kind of bird that did not fit the normal or typical pattern in this respect - we took back or defaulted the original conclusion.

   We can understand how nonmonotonic reasoning is properly used in argumentation by seeing that it is a species of presumptive reasoning that can be correctly used to shift a burden of proof in dialogue. In a type of dialogue where the goal is to prove something, there is a requirement or standard of the weight of proof called the *burden of proof,* meaning that a participant in the dialogue has an obligation to prove an argument of a particular strength or weight, in order to fulfil the goal. The burden of proof is defined globally, in any given context of dialogue, as part of what defines the goal for that type of dialogue. But burden of proof is also defined locally, at the level of a given speech act in a dialogue. For example, if a participant in a critical discussion makes an assertion, then she is normally obliged to prove that assertion, if challenged by the other party. The speech act of assertion normally incurs a burden of proof to back up or prove that proposition, according to the global standard of proof required for that type of dialogue.

The speech act of presumption reverses the normal burden of proof arrangement for assertion in dialogue. A presumption is brought forward by its proponent in a dialogue as a commitment that is supposed to be acceptable, in the absence of evidence to the contrary. Presumptions can be justified on procedural or practical grounds, even though the evidence is insufficient to support a proposition's acceptance. But the kind of acceptance or commitment appropriate for a presumption is tentative and provisional.

For example, in law it is normally required that death be proved before inheritance can take place. But if a person is missing for a designated period - seven years, in some jurisdictions - then it may be presumed - for purposes of setting claims on the estate - that the person is dead. However, such a presumption is defeasible. If definite knowledge comes in that proves that the person in question is alive, then the presumption of death is rebutted.

Presumptive reasoning is closely related to a type of argument called the *argumentum ad ignorantiam* (argument from ignorance), traditionally held to be a fallacy. However, arguments from ignorance are not always fallacious. In many cases, absence of knowledge to prove a proposition constitutes good presumptive grounds for tentatively accepting that proposition as a commitment (subject to default should new information into the dialogue that reverses the conclusion drawn earlier). Presumptive reasoning enables practical reasoning to go ahead in variable circumstances where knowledge is incomplete.

Researchers in AI have put forward various technical solutions that attempt to formalize nonmonotonic reasoning. However, it would be a mistake to think that there could be some single formula or requirement that would solve the problem. The reason is that although some types of exceptions to default propositions can be defined in some cases, in general the 'new information' in a case could be of a kind that was impossible to anticipate. For example, we might try to classify all the different kinds of non-flying birds, like penguins, ostriches, etc. But perhaps, in another case, Tweety might be a non-flier for some reason we couldn't have reasonably anticipated, e.g. he might have a broken wing.

How presumptive reasoning is used, correctly or incorrectly in a given case, depends on the context of dialogue, the speech act in which the inference was put forward in the dialogue, and on the type of argumentation

scheme appropriate for that inference.([19]) Whether a presumptive in-
ference is correct or fallacious in a particular case therefore depends on the
global burden of proof in a context of dialogue, and the proper assignment
of roles to the participants with respect to meeting the obligations ap-
propriate for that assignment. In some types of critical discussion, for
example, the one party may have the burden of proof while the goal of the
other may only be to ask critical questions. Fallacies can occur, in such a
context, where there has been an error of reasoning or the use of a deceptive
tactic of argumentation that conceals an illicit shift in the burden of proof.

What AI has discovered, then, is something philosophers should have
known all along, and would have known, if they hadn't gotten so confused
in passing along the subject-matter of the fallacies or sophistical refutations.
Aristotle described the fallacy of *secundum quid* very well, even giving good
and clear examples, and proving a useful practical test for applying his
analysis to particular cases. Now AI has given us a push to recognize pre-
sumptive, defeasible arguments as based on a distinctive kind of reasoning
of a non-monotonic type, we should overcome our past deductivist-induc-
tivist bias and blindness to the importance of presumptive reasoning in logic.
Part of this reawakening should involve the recognition of the *secundum
quid* as an important type of error or fallacy, worth study in its own right.

7. A model treatment

If Aristotle had the basic fallacy of *secundum quid* right then, how should
the logic textbooks describe it? What they should do is separate it off from
any treatment of related would-be fallacies like 'accident', 'converse ac-
cident', etc., and treat it under the heading of the *fallacy of ignoring qualifi-
cations (secundum quid).* Whether accident and converse accident should
be treated at all is a separate question, but at any rate, the kinds of meta-
physical issues raised by attempting to treat the fallacy of accident should
not be allowed to intrude on the treatment of *secundum quid* as a fallacy.

Joseph, in his textbook *An Introduction to Logic* (1916) took a very favor-
able approach, which began by recognizing the fallacy of accident has
"commonly" been "expounded" in a confusing way that is "ill defined",

([19]) This analysis of presumptive reasoning has been put forward more fully in Walton
(1993).

in a way that fails to distinguish it from the fallacy of *secundum quid (p.* 588). Joseph (p. 589) re-defined the fallacy of *secundum quid in* a clear and simple way that is easily recognizable as a common type of error: "It consists in using a principle or proposition without regard to the circumstances which modify its applicability in the case or kind of case before us." The following case is given (p. 589) as an example.

Case 8.   Water boils at a temperature of 212° Fahrenheit; therefore boiling water will be hot enough to cook an egg hard in five minutes: but if we argue thus at an altitude of 5,000 feet, we shall be disap pointed; for the height, through the difference in the pressure of the air, qualities the truth of our general principle.

The problem in this case is one of neglect of qualifications in dealing with an exceptional situation, in relation to a general principle that holds in normal situations (standard conditions).

   It is interesting to note that Joseph stressed the practical nature of the principle stating that water boils at 212° F, adding that "boiling water will be hot enough to cook an egg in five minutes". This principle is defined for the kind of standard conditions one would normally be expected to encounter in practical activities in daily life. But in an unusual set of circumstances, e.g. at a higher altitude than one might normally expect, it fails.

   The fallacy of *secundum quid,* so conceived, is the failure to recognize the non-absolute character of the principle in admitting of exceptional cases. This type of failure could be represented by the following kind of inference.

   Water, in standard conditions, boils at 212°F.
   This water, at five thousand feet above sea level, is at a temperature of 212° F.
   Therefore, this water is boiling.

The fallacy of *secundum quid is* committed by the arguer who looks at or treats the inference above as though it were on a par with the following type of deductively valid inference.

   All persons are mortal.
   Socrates is a person.
   Therefore, Socrates is mortal.

This inference is deductively valid, meaning that it is logically impossible for the premises to be true and the conclusion false. In sharp contrast, the inference above (concerning water) fails to have this property. In a particular case, it is logically possible that the premises are true and the conclusion is false. Indeed, the special situation where the water is at five thousand feet above sea level, is just such a case in point. Here, the premises may be true while the conclusion of the inference is false.

   Joseph's general description of the fallacy of *secundum quid* is also very clear in identifying a readily recognizable type of common error of reasoning, and is worth quoting in full.

> A proposition may be stated *simpliciter*, or without qualification, either because the conditions which restrict its truth are unknown, or because, though known, they are thought seldom to arise, and so are neglected; and we may proceed to apply it where, had it been qualified as the truth required, it would be seen to be inapplicable. Perhaps it holds good normally, or in any circumstances contemplated by the speaker; the unfair confutation lies in taking advance of his statement to bring under it a case which, had he thought of it, would have led him to qualify the statement at the outset. But it is not only in disputation that the fallacy occurs. We are all of us at times guilty of it; we argue from principles that hold good normally, without even settling what conditions constitute the normal, or satisfying ourselves that they are present in the case about which we are arguing.[20]

Again, Joseph's way of describing the fallacy is very nice, because you can see exactly what the error is. It has to do with two ways of stating a proposition, or putting a proposition forward in argumentation. You can state it *simpliciter*, presumably like the proposition 'All men are mortal.' was meant to be put forward in the inference above. It was, at least presumably, put forward without qualification, as a universal generalization that admits of no exceptions. One contrary case makes it false. In another type of case, you can state a proposition in a qualified way. It holds in normal circumstances, but not *every* contrary instance refutes or falsifies it. If the counter-example can be shown to be an exceptional case, then the principle can still stand. What is meant by 'stand' here, however, is holding in nor-

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[20] Joseph (1916, p. 589).

mal or standard conditions, subject to exceptions.

The fallacy of *secundum quid,* as Joseph describes it, is clearly recognizable as a common kind of error of reasoning, well worth including in the list of informal fallacies. Also, the account of it he gives appears to be very close, in general outline, to the kind of fallacy Aristotle described as *secundum quid* in *On Sophistical Refutations.* If this is right, then it would seem to be true indeed that the majority of writers of logic textbooks between Aristotle and Joseph (and after Joseph, as well) have well and truly made a mess of things.

In defense of the textbook authors, it should be said that they have been working under the disabling lack of any theory of presumptive reasoning, or even any recognition that this is a distinctive type of reasoning in its own right, different from deductive and inductive reasoning as a type of argumentation. In fact, presumptive reasoning is vitally important to understanding the logic of most of the major informal fallacies traditionally included in the logic textbooks.

The problem then is not the fault of the individual textbook writers, who have often done surprisingly well, but the lack of an underlying theory to guide their efforts. However, the lack of theory can also, at least partly, be explained by the historical bias against taking any kind of opinion-based reasoning seriously in logic, ever since the condemnation of the sophists as having no regard for the truth precisely because they advocated that opinion-based presumptive reasoning is a legitimate kind of argumentation.

8. *Dynamic reasoning*

In many cases, the type of reasoning associated with informal fallacies is a presumptive kind of reasoning that is not inherently wrong or fallacious *per se,* but is inherently defeasible, and subject to correction. This type of reasoning is inherently open-ended and tentative in nature. One of the main problems with it is that it is often taken in an absolutistic or dogmatic way. And that goes against its basic nature as being inherently nonmonotonic. With this kind of reasoning, an arguer should always keep an open mind, and be ready to concede that his argument is subject to correction or qualification, should new evidence or counter-indications enter the dialogue.

Such is also the case generally with practical reasoning, because the circumstances of a particular case tend to be subject to changes in this kind of reasoning. Practical reasoning moves forward until it confronts a situation

where it can go ahead no further. There is lack of knowledge to resolve the problem. So now, the reasoning must proceed *ad ignorantiam*. What does it do? It begins to operate on the basis of presumptive reasoning. Perhaps, for example, it can consult a source of knowledge to get an expert opinion. Here the *ad verecundiam* type of argument comes in. Experts make mistakes. Reasoning from the sayso of an expert is inherently fallible as a type of argumentation. Still, given the right conditions, acting on the advice of an expert could be quite reasonable and nonfallacious.

You can think of practical reasoning as having a subject, an agent or system that contains a set of commitments. During the sequence of dynamic reasoning, the system brings in new information and goals which add propositions to its commitment set. In other instances, it retracts commitments, for example when it finds evidence that refutes one of its previous commitments.

Or another choice would be for the system to proceed to act, and by trial and error, collect new information that would be useful. Seeing the consequences of the various attempts it has made, the system can perhaps learn some new, useful information by feedback, and thereby correct and improve its attempts to steer a course toward its goal. This way of proceeding may involve circular reasoning. Presumptions are acted upon, and if they work in practice, that gives them an additional weight of presumption. This process is, if not circular, a spiral path of increased sophistication of the reasoning of the system.

Often, this process of grouping and improvement of reasoning must act on presumptions derived from customary ways of acting, and other presumptions based on propositions that are generally accepted, but cannot be proved. This is the *argumentum ad populum*.

Typically, the reasoning takes the form of *argumentum ad consequentiam*. As the system sees or predicts consequences of its actions that would likely lead toward its goals, it labels these consequences good or favorable, and tries to bring them about if possible. Similarly, if the system recognizes or thinks that certain consequences will abort or prevent its goals, it labels these consequences bad, and tries to avoid them. Using this kind of consequential reasoning, the system argues with itself to the effect, 'This is likely to be a good consequence. Carry it out!' Or 'This is likely to be a bad consequence. Try to avoid it!' The system here is using the argumentation

schemes for argument from consequences.[21]

Another common type of argumentation is the slippery slope. The system tries to look ahead, and see, if possible, the long term consequences of its projected actions. If it sees that taking one step would lead to another, and so forth, and the whole chain would lead to a disastrous outcome, the system will warn itself against taking such a first step.[22]

The system is typically moving ahead on the basis of heuristic rules of thumb and presumptions that cannot be conclusively verified. They may turn out be false or inapplicable in the given circumstances confronted by the system, as its knowledge of those circumstances develops. Hence the system moves ahead on the basts of nonmonotonic reasoning that will encounter defaults and exceptions. This is where the *secundum quid* fallacy comes in, because the system must always be alert and open to the possibility of default, as it reasons along. The system must beware of depending too heavily, or dogmatically upon the rules of thumb it must operate on. The system must remain flexible, and be ready to retract commitments, where new evidence comes in to justify correction or default.

Reasoning of this kind must generally be open to new evidence that may come in, in the future, and it cannot be anticipated exactly which way this evidence will tend to go. Hence it is a failure of the system if it becomes closed to the admitting of new evidence, as the sequence of reasoning goes along. If the system becomes too rigid or closed in this fashion, the reasoning becomes dogmatic. That is, it becomes stuck or fixed, and is unable to cope with argumentation properly.

On the other hand, it is an opposite kind of problem if it becomes too flexible, and continually evades commitment by hedging, maintaining that each set of individual circumstances is unique, and so forth. This kind of attitude is reflected in the kind of approach that always avoids reaching any definite conclusion in reasoning on the grounds that such a course would be 'authoritarian' or 'arbitrary'. This is the opposite fault of dogmatism. This point of view holds that every argument is just as good as any other argument. Often espoused on grounds of toleration, freedom, and right to one's own opinion, this attitude maintains that my argument is equally valid, no matter how good your argument against it is. Dynamic reasoning must steer a middle course between these two extremes or failures, if it is to be

[21]See note 18.

[22] This fallacy is analyzed in Walton (1993a).

any good. It must be prepared to recognize that an argument is good in certain respects, while leaving open the possibility that this argument may later turn out to be bad in other respects.

Dogmatism is an attitude, not a kind of tactic of argumentation, but the closing off of argumentation that is characteristic of dogmatism is also associated with how many of the fallacies work as sophistical tactics. Many of the traditional fallacies are tactics that block legitimate goals of dialogue because they involve legitimate kinds of argumentation that are pressed ahead too aggressively in a context of dialogue, allowing a respondent insufficient room to ask legitimate critical questions or pose objections. The *ad verecundiam* is again a good example. The tactic used here is to invalidate the respondent's objections to your argument which has been based on expert opinion, by suggesting that whatever the respondent says, it can have no weight at all against the opinion of the experts in the field in question. The suggestion is that the respondent really has no right to speak out on such a question. For, as a nonexpert, he has no access to the evidence at all. So if he does speak out, it merely shows his impudence and bad judgment. The tactic here involves a kind of poisoning the well effect which is also evident in other traditional fallacies like the *ad hominem*. With the *ad hominem,* there is generally a kind of disqualifying suggestion present that the person attacked is not a sincere contributor to the dialogue, and that therefore her arguments can be discounted or even ignored, in advance of whatever they happen to be.

In the past, dynamic reasoning has not been well understood or accepted as a kind of reasoning that can be legitimately or correctly used in good arguments. Any kind of reasoning that was not recognizable as either deductive or inductive was regarded as being generally fallacious. There was a kind of mistrust of any presumption-based reasoning on the grounds that you can never rely on it absolutely to prevent yourself reasoning from true premises to a false conclusion. After all, you might turn out to be wrong, and if your standard of rigor is high, then such 'subjective' argumentation would not really be solid proof of your conclusion.

We must come to recognize however that this fallible and tentative aspect of presumptive reasoning is simply part of its non-monotonic nature. It should be seen as a special kind of reasoning in its own right that can be used rightly to fulfil a burden of proof in the right context of dialogue on a practical basis. It should give way to more conclusive deductive or inductive proofs where these are available. But it still should be regarded as useful kind of argumentation that is, in many cases, correct within its limita-

tions, when harder evidence that would solve or eliminate a practical problem is not available.

Underlying the study of *secundum quid* as a fallacy there is a general, theoretical issue for logic involving relativism. Once we recognize presumptive reasoning based on generalizations subject to exceptions, based on the way things can normally be expected to go in a typical situation, aren't we really opening the door to subjective reasoning as a legitimate type of argumentation? Isn't this really a kind of relativism which loosens the rigor of logic? Here we come back to the ancient controversy surrounding the condemnation of the sophists.

9. *Protagorean relativism*

What did Protagoras of Abdera mean by his famous saying, "Man is the measure of all things, of things that are that (or 'how') they are and of things that are not that (or 'how') they are not."? Plato, in the *Theaetetus* interpreted this saying by offering the following example: when the same wind appears cold to one person, and warm to another person, then that wind is cold to the person to whom it seems cold, and warm to the person to whom it seems warm. The example gets the idea across of some kind of relativism, but what really follows?

Was Protagoras saying that when two people have a conflict of opinions, it does not follow that what the one said is true, while what the other said is false? According to Kerferd (1967, p. 505), that is exactly the inference we can draw from Plato's example of the doctrine of Protagoras: 'It follows that all perceptions are true and the ordinary view is mistaken, according to which, in cases of conflict, one person is right and the other person is wrong about the quality of the wind or anything else.' Since very little of Protagoras' written work has survived, it is hard to confirm such conjectures fully, but Kerferd (p. 505) thinks that this inference can be taken to represent the position held by Protagoras.

Typically the saying of Protagoras has been taken as expressing a form of relativism that is so radical that it is open to self-refutation by the 'turning of the tables' *(peritrope)* argument: if the doctrine of Protagoras were true, then those who hold that it is false are holding the truth. In other words, the doctrine of Protagoras refutes itself because, according to this very doctrine, the proposition 'The doctrine of Protagoras is false', cannot be said to be false. The problem seems to be that the Protagorean doctrine

cannot successfully defend itself against any attacks that deny it is true.

Plato pointed out in the *Theaetetus* that surely if Protagoras could "pop his head up through the ground", he would have an answer to this problem. Whatever Protagoras might say, there is a way to meet the turning of the tables argument by interpreting his doctrine in a particular way. Perhaps what the saying could mean is that whenever there is a genuine conflict of opinions, it is not appropriate to say that the one opinion is true and the other false, but it could be appropriate to say that the one opinion is better than the other.

But what does it mean to say that one opinion is 'better than' another? On this question, Protagoras did have definite views, according to Kerferd (1967, p. 506):

> In the case of conflict about perceived qualities all perceptions are true. But some perceptions are better than others, for example, the percep-tions normally found in a healthy man as distinct from those found in a man who is ill. It is the function of a doctor, Protagoras held, to change a man who is ill so that his perceptions become those of a man who is well. Likewise, in moral, political, and aesthetic conflicts it is the function of the Sophist as a teacher to work a change so that better views about what is 'just' and `beautiful' will seem true to the 'patient' -- better, that is, than those which previously seemed true to him. All the "patient's" views are equally true, but some are better than others.

Kerferd adds (p. 506) that better views, according to Protagoras, are not just views that seem better, but views that really are better, because they have better consequences.

Perhaps then, what the doctrine of Protagoras means is that in a genuine conflict of opinions, where there is room for argument on both sides, you may not be able to show conclusively that the conclusion of the one side is true and the conclusion on the other side false, but in many cases you may be able to show that the argument on the one side is 'better' or 'stronger' than the argument on the other side. If so, this finding may be perfectly good grounds for committing yourself to the conclusion of the argument that is stronger, at least provisionally (subject to correction).

The problem that remains, however, is that commitment of this type is always tentative and provisional, because by its nature, we cannot be sure that, at some point in the future, the argument that was formerly the weaker has now become the stronger. The better view is the one that has better

consequences up to this point. But in the future, there could be further consequences of both views that would make the other view 'better'.

This way of interpreting the Protagorean point of view is not going to satisfy all the would-be table-turners then. They are still going to feel that we can't really accept the man-measure doctrine as true, because we can't be sure of it - it could still turn out to be false. The Protagorean point of view is only successful to the extent that it can reassure those doubts by saying that generally, with conflicts of opinion, it is a matter of weighing the stronger argument against the weaker, and then committing to the opinion that is the conclusion of the stronger argument. Judged by its own standard, the man-measure doctrine would seem to be a practical, heuristic principle which we cannot be sure is true, but which nevertheless can be justified on grounds of its good consequences.

Because of the lack of definitive guidance from the small corpus of sayings or extant writings attributable to Protagoras, it is possible to interpret Protagorean relativism in a stricter, or stronger way, and also in a looser, or milder way.

Strict Protagorean Relativism:
For every conflict of opinions, it is not possible to prove (conclusively) that the one opinion is true and the other false.

Mild Protagorean Relativism:
For some conflicts of opinions, it is not possible to prove (conclusively) that the one opinion is true and the other false.

The mild relativism seems much more harmless and less controversial, but it is still a significant kind of relativism. According to mild relativism, there are different contexts of dialogue, or conversational frameworks in which arguments are proved, refuted, supported, etc. If a conflict of opinion occurs, say, in a political debate, then it is not possible to prove that the opinion on the one side is true, or that the opinion on the other side is false. In this context of dialogue, the conflict of opinions is about two different points of view. One could be better supported by argumentation in that context. Yet it does not follow that we should say that this opinion is 'true' or has been 'shown to be true'. Like the warm and cold wind conflict of opinion, the difference is one of points of view.

But the mild relativism is compatible with the contention that in other contexts of dialogue, for example, in a scientific inquiry, it is possible to

prove that one opinion or conjecture is true while its opposite is false. This type of conflict of opinions can be resolved by a conclusive proof or disproof of one of the contentions. For example, such a conflict might concern the pair of propositions 'The earth is round' *versus* 'The earth is flat' or 'Two is a prime number' *versus* `Two is not a prime number'. Here it is not a question of which of the pair is better, 'healthier', or more plausible as a point of view. One of the pair is demonstrably false, and there is no need to weigh relative strengths of argumentation on both sides in a more relativistic way.

According to mild relativism, there are different contexts in which arguments occur. In an inquiry, you may be able to definitively prove that a particular proposition is true, or alternatively show that it cannot be proved. In a critical discussion on a controversial issue, you, quite rightly, do not expect to meet that kind of standard. It is enough, for practical purposes, to show that the one opinion is better supported by argument than the other.

The mild form of relativism is quite compatible with the thesis that the most significant conflicts of opinion that matter in one's life are generally of the second type. So it is a significant type of relativism with some 'bite'. Moreover, by postulating different contexts for argumentation, it is really quite a deep kind of relativism, and far from being trivial.

It needs to be recognized then that the move towards informal logic, from a formalistic, deductivist conception of logic, does involve a shift towards a relativistic conception of the concept of a reasonable argument. But the question is what form of relativism is involved. And is it a kind of relativism that logic can live with, as an objective, scientific discipline. These questions are brought very much to the forefront by our consideration of the *secundum quid* fallacy as a type of error of dynamic reasoning that can be identified, analyzed, and evaluated objectively in particular cases.

10. *Conclusions*

Analyzing *secundum quid is* a non-trivial problem, because dynamic reasoning, while it is associated with many informal fallacies, can be used correctly in some cases. However, Aristotle's practical test for evaluating specific cases was already the basis of a good solution, because he advocated looking at each individual case on its merits, starting with the conclusion, to see whether the inference that was drawn is of the kind that requires the taking of exceptions and qualifications into account or not.

The analysis of this Aristotelian fallacy presented above is pragmatic in nature, because the context of dialogue has to be used in judging whether a strict (universal) or qualified (defeasible) generalization is appropriate in a given case where an argument has been put forward. Drawing a conclusion by inference from either a strict or a qualified generalization can be a reasonable kind of argument. But the fallacious kind of case occurs where the proponent of the argument draws out the conclusion presenting the argument as though it were a strict (deductive) inference based on deductive reasoning, whereas in reality, in the given case a defeasible (qualified) interpretation of the generalization in the major premise is appropriate.

But what about inductive generalizations? They fall in between absolute (universal) generalizations and presumptive (defeasible) generalizations. It could also be the same type of fallacy, or a similar one, to jump from a universal to an inductive generalization, or from an inductive generalization to a presumptive one. Or perhaps these could be two different fallacies.

In this paper, we have not attempted to give an analysis of inductive generalizations, or to study in detail the associated fallacies and problems of using this type of generalization in argumentation. However, it does seem reasonable that they should be included, as well, under the fallacy classification of 'hasty generalization'.

There are three kinds of errors or faulty types of inference involved, represented in figure 1 by the three arrows.
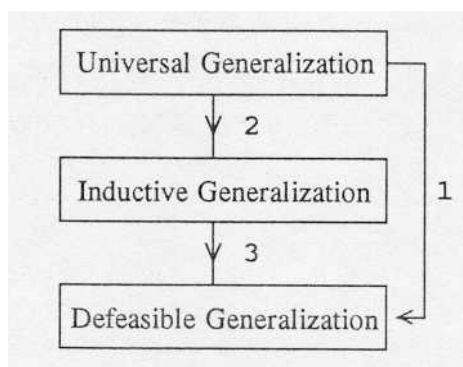

Figure 1.

Error 1 is the fallacy of ignoring qualifications to a defeasible generalization *(secundum quid)* of the type that has been the primary target of analysis in this essay. As a general term to cover all three kinds of error, *hasty general-*

ization would suit very well. Error 3, of going from an inductive to a defeasible generalization, could perhaps best be treated as a special type of case, or subfallacy of the general fallacy of ignoring qualifications. Perhaps it could be caged the *inductive variant* of the *secundum quid* fallacy. Finally, error 2, which does not relate to defeasible reasoning at all, is best treated as the distinctively inductive subspecies of the fallacy of hasty generalization. Perhaps it could be called *hasty inductive generalization.*

The two most common types of fallacies of hasty inductive generalization cited in the textbooks are called criticisms in Walton (1989) because, in many cases, and even typically, they are not (in practice) such bad faults that they deserve to be labelled generally as fallacies. The criticism of *insufficient statistics* (Walton, 1989, p. 206) is appropriate when a sample selected is so small that the generalization based on it is worthless as a conclusion. The criticism of *biased statistics* is appropriate in cases where the distribution of the property in the generalization does not properly match the distribution of the property in the sample (Walton, 1989, p. 207). In extreme cases, where the failure is systematic or persistent, and not just a slip, these two kinds of errors in arguing to or from an inductive generalization can be classified as fallacies. At any rate, it may be appropriate to classify them as subspecies of the fallacy of hasty inductive generalization, and that is the proposal we will suggest. Then we would have the system of classification in figure 2.

Figure 2.
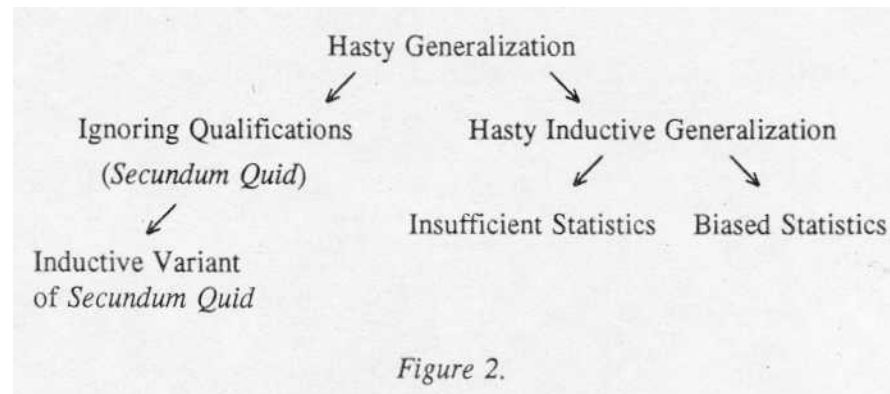
Should we call the *secundum quid* type of error the fallacy of 'neglecting qualifications', the fallacy of 'ignoring qualifications', or the fallacy of 'ignoring exceptions'? In some cases, the fallacy seems more like a sophistical tactic of argumentation than merely an error of reasoning. Perhaps, in such cases, it could even be called the fallacy of 'suppressing qualifications'.

To choose a middle way between the weaker 'neglecting' and the stronger 'suppressing', the more neutral term 'ignoring' is not bad. Let us therefore use as the standard terminology, the *fallacy of ignoring qualifications* (in Latin, *secundum quid,* in Greek, *para to pe).*

According to this proposed terminology and system of classification, the fallacy of accident is to be treated as a separate kind of fallacy that has no place in this system of analysis of hasty generalization and its subfallacies. While not trying to analyze the so-called fallacy of accident, a job best left for another occasion, we do conclude that it is questionable, and remains to be shown, whether accident is a (major) informal fallacy that ought to be covered by (at least introductory) texts on informal logic. The kinds of cases presented by Aristotle as examples of the fallacy of accident do appear to be genuinely philosophically and logically interesting. But they look more like logical paradoxes or puzzles[23], more of theoretical interest than of interest as representing common errors of reasoning or sophistical tactics that are important to detect and be on guard against in argumentation in everyday conversations.

Whether the kinds of inferences that Aristotle studied under the heading of the fallacy of accident are very important or not to include in the textbooks as common and influential errors of reasoning remains to be seen. My initial suspicion is that they are like the case of the fallacy called *amphiboly*. It is included in a lot of the textbooks, but the examples given have never persuaded one that here is an error worth taking care to warn students of informal logic about as a common and tricky pitfall in argumentation. If accident and amphiboly should be taken seriously, then the burden of proof should be on those who would make a case for continuing to accord them prominence as fallacies to be featured in elementary logic textbooks.

By contrast, it is immediately apparent, even from the cases studied here, that *secundum quid,* the fallacy of ignoring qualifications, is a very common error in everyday argumentation that often leads to confusion, mischief and significant instances of misleading and bad reasoning.

The big problem has been that the deductivist-inductivist bias in logic in the past has been associated with a general failure to even recognize dynamic presumptive reasoning as a legitimate kind of argumentation in its own right. Small wonder then that faults and fallacies of ignoring qualifications have never been systematically presented in a useful way in the textbooks.

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[23] Bueno (1988) supports this interpretation.

The first step in coming to study how dynamic reasoning fails in some cases is to see how it can be used correctly in argumentation. But this requires looking at argument from a new point of view - a Protagorean relativism that accepts presumptive reasoning as legitimate generally in argumentation, subject, of course, to exceptions.

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ACKNOWLEDGMENTS

REFERENCES

[1]   Aristotle, *On Sophistical Refutations,* trans. E. S. Forster, Loeb Classical Library Edition, Cambridge, Mass., Harvard University Press, 1928.

[2]   Antoine Arnauld, *The Art of Thinking,* trans. James Dickoff and Patricia James, Indianapolis, Bobbs-Merrill, 1964 [first published in 1662].

[3]   Allan Brick, 'Philoponus on the Fallacy of Accident', *Ancient Philosophy,* **7**, 1987, 131-146.

[4]   Kenneth T. Barnes, 'Aristotle on Identity and its Problems', *Phronesis*, **22**, 1977, 48-62.

[5]   Anibal A. Bueno, 'Aristotle, the Fallacy of Accident, and the Nature of Predication: A Historical Inquiry', *Journal of the History of Philosophy*, **26**, 1988, 5-24.

[6]   Morris R. Cohen and Ernest Nagel, *An Introduction to Logic and Scientific Method,* New York, Harcourt Brace & World, 1934.

[7]   Irving M. Copi and Carl Cohen, *Introduction to Logic,* 8th ed., New York, Macmillan, 1990.

[8]   Augustus DeMorgan, *Formal Logic,* London, Taylor and Walton, 1847.

[9]   Sten Ebbesen, *Commentaries and Commentators on Aristotle's Sophistici Elenchi,* 3 vols., Leiden, E. J. Brill, 1981.

[10]   S. Morris Engel, *With Good Reason: An Introduction to Informal Fallacies,* 2nd ed., New York, St. Martin's Press, 1982.

[11]   W. Ward Fearnside and William B. Holther, *Fallacy: The Counterfeit of Argument,* Englewood Cliffs, Prentice-Hall, 1959.

[12]   Hester G. Gelber, 'The Fallacy of Accident and the *Dictum de Omni:* Late Medieval Controversy over a Reciprocal Pair', *Vivarium,* **25**, 1987, 110-145.

[12]   Charles L. Hamblin, *Fallacies,* London, Methuen, 1970.

[13]   H.W.B. Joseph, *An Introduction to Logic,* 2nd ed., Oxford, The Clarendon Press, 1916.

[14]   G.B. Kerferd, 'Protagoras of Abdera', *The Encyclopedia of Philosophy,* ed. Paul Edwards, vol. 5, New York, Macmillan, 1967, 505-507.

[151   Edward Poste, *Aristotle on Fallacies or the Sophistici Elenchi,* London, Macmillan & Co, 1866.

[16]   Raymond Reiter, 'Nonmonotonic Reasoning', *Annual Review of Computer Science,* **2**, 1987, 147-186.

[17]   Nicholas Rescher, *Plausible Reasoning,* Assen, Van Gorcum, 1976.

(18)   Dagobert D. Runes, *Dictionary of Philosophy,* 15th ed., Paterson, N. J., Littlefield, Adams & Co., 1964.

[19]   Merrilee H. Salmon, *Introduction to Logic and Critical Thinking,* San Diego, Harcourt Brace Jovanovich, 1984.

[20]   Douglas N. Walton, *Informal Logic: A Handbook of Critical Argumentation,* Cambridge, Cambridge University Press, 1989.

[21]   Douglas N. Walton, *Practical Reasoning: Goal-Driven, Knowledge-Based, Action-Guiding Argumentation,* Savage, Maryland, Rowman and Littlefield, 1990.

[22]   Douglas N. Walton, *Plausible Arguments in Everyday Conversation,* Albany, State University of New York Press, 1993.

[23]   Douglas N. Walton, *Slippery Slope Arguments,* Oxford, Oxford University Press, 1993a.

[24]   Richard Whately, *Elements of Logic,* New York, William Jackson, 1836.

[25]   Russel R. Windes and Arthur Hastings, *Argumentation and Advocacy,*
       New York, Random House, 1965.