Chapter 2
Philosophy and Public Health

2.1 Introduction

It was argued in Chap. 1 that a new model of public health reasoning must draw on epistemic and logical concepts that are more typically discussed in philosophy. Those concepts are presumption and a group of arguments called the informal fallacies. Although some account was given of both in the last chapter, their analysis was rather cursory in nature. This chapter returns to these concepts with the purpose of examining them in detail. In the next section, several features of presumption are considered. These features, which include defeasibility and context sensitivity, are integral to the use of this concept in contexts of uncertainty. One such context is public health where deliberations are typically conducted under sub-optimal epistemic conditions. The discussion will consider how each feature of presumption represents an adaptation to these conditions. In effect, it is argued that presumption is an epistemic concept which is well suited to the challenge of reasoning in the absence of knowledge. However, by itself, presumption cannot take us far in our cognitive deliberations. Presumed theses must enter into logical relationships with other theses if they are to play a role in public health reasoning. Those logical relationships are variously embodied by a group of arguments known as the informal fallacies. Logicians have had much to say about these arguments. The largely negative characterizations of these arguments that have dominated the logical literature to date belie the demonstrable gains that accrue from their use in certain epistemic contexts. The second main aim of this chapter is to examine the arguments which make those gains possible. The logical and epistemic features of several of the major informal fallacies will be considered and illustrated in the context of specific public health problems.

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2.2 The Concept of Presumption

Presumption has often been treated as the poor cousin of knowledge in epistemological discussion. While philosophical analyses of knowledge are commonplace, few philosophers have devoted their attention to the concept of presumption. Writing in 1983, Ullmann-Margalit cites only three papers that even discuss presumption (Llewelyn 1962; Lamb 1972; Katzner 1973). She remarks of presumption that 'the notion itself has not so far been the focus of proper philosophical attention. I shall in this paper give it the attention I think it deserves' (1983: 143). More recently, Rescher (2006: xii) has remarked of presumption that '[its] foothold in epistemology is still rather insecure'. Notwithstanding the limited treatment of presumption to date, it seems clear that little progress can be made on a new model of public health reasoning in the absence of a comprehensive analysis of this concept. To this end, a number of features of presumption will be examined in this section. These features of presumption include its defeasibility, rational justification, context sensitivity, epistemic status and orientation to action. These features derive largely from legal, dialectical and epistemic accounts of presumption (see Rescher (2006) for discussion). However, it will be argued that they are equally applicable to a range of contexts in public health where they function as effective adaptations to the epistemic conditions of those contexts.

2.2.1 Presumptions Are Defeasible

Presumption is an inherently defeasible notion. Walton (1992a: 42) remarks that a 'presumption is a kind of provisional concession or acceptance of a hypothesis that is reasonable to act on for the present, but that may have to be given up at some future point' (italics added). Any concept that is defeasible has obvious appeal for a domain such as public health. As an evidence-based discipline, public health must always be ready to revise even its most central claims as new and contrary evidence emerges. The defeasibility of presumptions is the mechanism by means of which this is achieved. Where presumptions are beyond the reach of contrary evidence, they assume the status of immutable theses. Such theses are closer to the presumption rules found in law[1] than they are to the defeasible presumptions that underpin public health. However, even in public health, presumptions can be shielded from contrary evidence, often with disastrous consequences for human health.

Just such a scenario occurred during the BSE epidemic in the UK. During this epidemic, an analogy between BSE in cattle and scrapie in sheep was used extensively by scientists in their risk assessments of this new bovine disease. However, this analogy was based on some rather tenuous evidence which emerged from early epidemiological investigations and molecular and histopathological studies (Cummings 2010). The status of this evidence was such that investigators should have viewed this analogy as a presumption. In the event, scientists and others continued to uphold this analogy even when it was clear that BSE differed from

scrapie in significant respects (e.g. host range and pathogenesis). A once productive analogy between BSE and scrapie led scientists to draw false conclusions about this new disease long before the first cases of transmission to humans were confirmed. This significant failure in the public health of the UK could have been avoided had the analogy between BSE and scrapie remained a defeasible presumption in the thinking of scientists.

Although presumption is an epistemic concept, its defeasibility serves an important cognitive function. In terms of survival, it is in the interests of cognitive agents to have an accurate mental representation of their environment. In order for this to be achieved, agents must be able to overturn false claims or theses in favour of propositions which are a true representation of states of affairs in the world. The defeasibility of presumption enables cognitive agents to undertake this important function. In public health, scientists and lay people must continually revise their mental representations to accord with an environment which changes rapidly as new threats to human health emerge. Cognitive agents, which are well adapted to their environment, have developed rational strategies to address these threats. Defeasible presumptions are one such strategy. By facilitating the revision of mental representations, defeasible presumptions enable cognitive agents to respond to changing environmental conditions. Viewed this way, the defeasibility of presumptions is an important adaptation of the rational resources of cognitive agents to their environment.

2.2.2 Presumptions Are Rationally Justified

Although we only ever have a tentative commitment to presumption, that commitment must be rationally warranted. There must be some grounds in place to support a presumption. Godden and Walton (2007: 337) state that 'presumptions can be based on practical, epistemic, moral, social, and prudential grounds, and each of these grounds befits a certain level of presumption'. Moral and ethical considerations relating to the protection of human health warrant a presumption against the safety of new drugs and other medical interventions. Prudential considerations lead those who handle guns to adopt the presumption that they are loaded. The social norms and expectations that are implicit in our interactions with others are what warrant a range of communicative presumptions – that an interlocutor is being sincere, is contributing truthful, relevant utterances to the interaction, and so on. The presumption that our perceptual and cognitive resources reflect reality is ultimately warranted on epistemic grounds – these resources are capable of delivering true claims to us and are the basis of our various knowledge claims.

To the extent that presumptions are the basis of much public health reasoning, these presumptions too must be rationally warranted or justified. For the conclusions of presumptive arguments, rational warrant consists in the presumptions which constitute the premises of those arguments. After all, the premises of any argument serve as grounds for the conclusion. Of equal importance, however, is the rational

warrant that attends the presumptive premises of these arguments. The nature of that warrant is determined by the particular domain from which the premise originates. In terms of public health, presumptions may emerge from epidemiological investigations, experimental studies and systematic reviews. From wherever they hail, presumptions must exhibit the level of warrant that befits a particular domain, discipline or study. When Brown et al. (1987) concluded that there was no evidence that scrapie is transmissible to humans on the basis of a 15-year epidemiological study of scrapie and CJD in humans, and a review of world literature, the level of rational warrant attending that presumption was consonant with the robustness of the investigations that had produced it.

However, difficulties arise in public health when a presumption is called upon to have a level of rational warrant that exceeds its evidential base. The widespread view among scientists that BSE was bovine scrapie was based on a number of indirect lines of evidence, specifically an early epidemiological investigation conducted by the Central Veterinary Laboratory, and histopathological and molecular studies (Cummings 2010). Direct evidence from strain-typing studies was not available to scientists when BSE first emerged in British cattle. The lack of direct evidence in support of the claim that BSE is bovine scrapie required that scientists treat this claim as a weakly warranted presumption. In the event, scientists and other actors in the BSE affair came to view this claim as a strongly (deductively) warranted proposition. Having exceeded the rational warrant of this claim, scientists began to use it extensively during risk assessments of this new bovine disease. That many of these risk assessments were subsequently shown to be erroneous can be directly attributed to a distortion of the rational warrant of this bovine scrapie thesis.

That presumptions are rationally warranted, and are not just accepted on a whim, has adaptive value for cognitive agents. In order to respond to environmental challenges, agents must resort to using those cognitive procedures which have been most successful in addressing earlier challenges. Rational methods such as deduction and induction have fared well in this regard. To these methods we can add presumptive reasoning which also has a good track record in facilitating deliberations across a range of domains (communication, legal judgements, etc.). These methods have each achieved notable successes such as to commend their continued use in responding to the challenges of the environment. The same cannot be said of telepathy and astrology which have lost out to rational procedures in the evolution of our cognitive resources. It is the exercise of rationality across a range of such procedures that leaves cognitive agents best placed to respond to an environment that can be at once predictable and uncertain. The rational warrant of presumption thus serves as a type of hallmark that we are using a procedure which is most likely to achieve success for us in our cognitive deliberations.

2.2.3 Presumptions Are Context Sensitive

Presumptions display context sensitivity. This context sensitivity is played out through the rational justification and defeasibility of presumptions. Not every thesis

obtained through our perceptual and cognitive resources is rationally warranted. An individual may suffer from memory loss or experience a visual disturbance, in which case one or more theses may lack any claim to rational justification. In the same way, a thesis that is arrived at by a presumptive argument may be rationally warranted in some contexts but lack rational justification in other contexts. The grounds which serve to justify presumptions, even the same presumptions, vary with features of context. The quantity and type of evidence that is required to overturn a presumption also varies from context to context. A presumption that is supported by several lines of evidence (e.g. expert testimony, experimental results) will be less easily overturned than a presumption with only one type of supporting evidence. It is more difficult to displace a presumption when that presumption is licensing urgent actions in the practical sphere (e.g. the implementation of disease containment measures) than when the implications of a presumption are purely theoretical.

The context sensitivity of presumption has important implications for public health. It requires scientists and others to examine closely the contextual factors that obtain in particular cases, and to draw on those factors as they pertain to the rational warrant and defeasibility of presumptions. The presumption against the safety of a new drug may be overturned in the case where an individual is gravely ill and the drug in question represents the only means of saving the patient's life. Not infrequently, however, public health scientists can overlook the context sensitivity of presumption. Detached from context, presumption can begin to distort the cognitive inquiries of which it is a part. When scientists during the BSE epidemic continued to uphold the analogy between BSE and scrapie in the face of countervailing considerations (e.g. the emergence of evidence that these two diseases have different host ranges), it was clear that presumptions based on this analogy had lost their context-sensitive status. Unable to respond to shifting epistemic conditions, presumption assumed the role of dogma in the thinking of scientists. The effect was an unshakeable confidence that BSE would act like scrapie which led to mistaken assessments of the risk of this bovine disease for human health.

The context sensitivity of our epistemic concepts has an important adaptive function. Cognitive agents must be aware of, and capable of responding to, rapidly changing conditions in their environment. Some of these conditions might present beneficial opportunities for those agents who stand ready to exploit them. Other conditions pose significant threats to cognitive agents who must take action to minimize them or avert them altogether. Neither of these responses is possible for cognitive agents whose concepts are insensitive to features of context. Such agents are poorly equipped to address the challenges of their environment, with all the adverse implications this has for their survival. A presumption against the safety of a new drug is not a prudent rational strategy, but a downright dangerous one, when there is a reasonable possibility that the life of a critically ill individual may be saved by the use of this drug. Consideration of the wider context of this presumption reveals conditions which warrant its abandonment, at least in this particular case. This rational course of action is not available to agents whose cognitive and epistemic concepts are constrained by context insensitivity.

2.2.4 *Presumptions Have a Lowly Epistemic Status*

Presumptions are 'low-grade data', to quote Rescher (2006). The low epistemic standing of presumption sets it apart from concepts such as knowledge which has a much elevated epistemic status. We do not know what we merely presume to be so. However, presumption can, and often does, improve its epistemic standing during the course of an inquiry. On one prominent theoretical account, that improvement is achieved through a process of retrospective revalidation, in which the results of inquiry are used to validate presumptions.[2] Although the lowly epistemic status of presumption may seem like a weakness of this concept, it is actually a substantial strength during cognitive inquiry. A requirement for knowledge at the outset of an inquiry serves only to foreclose investigation as claims of that epistemic standing are largely not available to cognitive agents. On account of its low-grade status, presumption represents an effective entry route into an inquiry when better established claims are unavailable for the most part. Also, the low epistemic standing of presumptions means that we are disinclined to base other claims upon them. This has the advantage that when our commitment to a presumption has to be relinquished, a body of other claims does not also have to be revised or rejected.

The capacity of presumptions to improve their epistemic standing during an inquiry can be illustrated in a public health context. Prior to the identification of HIV as the causal agent of AIDS, investigators presumed that early cases of AIDS were the result of a blood-borne virus. This presumption was based on epidemiological evidence, namely, the finding that groups which appeared to be most susceptible to AIDS (i.e. homosexual males and intravenous drug users) were also susceptible to another blood-borne viral infection called hepatitis B. When HIV was eventually confirmed to be the viral agent that is responsible for AIDS, the presumption which had launched the inquiry into this new infectious disease grew in epistemic stature. This presumption, which was the basis of early health advice from the Centers of Disease Control to the public, was subsequently validated by means of biomedical investigations. The validation provided by these investigations enabled a once low-grade presumption to ascend to the status of knowledge. At the same time, presumptions which described other purported causes of early AIDS cases and which were not validated by inquiry were relinquished by investigators.

As with the other features of presumption that we have considered in this section, the low-grade status of presumption has adaptive value for cognitive agents. This feature of presumption embodies a type of cognitive economy for agents. By only making a minimal, initial investment in presumption, agents can conserve valuable cognitive resources. We only ever make a substantial investment in presumption after it has proven its worth to us in inquiry. The low-grade status of presumption ensures that even if a presumption delivers little or no return for cognitive agents, there has at least been no substantial expenditure of our cognitive resources on it. Also, because cognitive agents are disinclined to rest any significant commitments or claims on a concept with a low-grade status, there is little cognitive expenditure incurred if a presumption has to be overturned. This is not true of a better established

epistemic concept such as knowledge where rejection of known theses incurs substantial expenditure for agents in the form of wider revision of theses. The low-grade nature of presumption thus delivers the maximum cognitive return for agents in terms of validated theses for a minimal, initial outlay of our cognitive resources.

2.2.5 Presumptions Are Action Oriented

Presumptions can be used in cognitive inquiries that address theoretical questions in a range of domains. But they are first and foremost an instrumentality of practical rationality.[3] As such, their function is to licence decisions and actions in the practical sphere in advance of complete deliberation of an issue. While inquiries in theoretical domains can proceed at a pace that is slow and deliberative, the same cannot be said of inquiries into practical matters. Delays in these inquiries as we take time to conduct investigations and gather evidence can have serious consequences. Presumption marks a juncture in these inquiries where we can put deliberation on hold, at least on a temporary basis, and implement actions in the practical sphere. These actions are warranted by the need to respond to problems that will not await the outcome of extended deliberation. The justification of these actions is ultimately on practical rather than on theoretical grounds. The use of presumption in these contexts is an acknowledgement that there are circumstances in which it is irrational to delay action in favour of further deliberation and evidence gathering.

The action-oriented nature of presumption has special relevance in public health. Where a public health problem is particularly pressing, actions must be taken in advance of full deliberation and investigation of the issue in question. For example, an inquiry into an emerging infectious disease will need to consider the nature and origin of the pathogen, its incubation period, routes of transmission, and much else besides. But alongside or even before these important questions have been answered is the need to put into place disease containment measures. These measures may include quarantine of infected individuals, the use of prophylactic drugs, and bans on public gatherings and other activities. These types of action were implemented as part of the global response to outbreaks of SARS and avian influenza H5N1, when these diseases first emerged in 2002 and 1997, respectively. The point is not that theoretical knowledge of these emerging infectious diseases is not important – it certainly is. Rather, it is that public health officials cannot await the outcome of the scientific investigations that would have produced that knowledge in order to introduce disease containment measures. Presumption warrants these actions in the practical sphere, actions that must proceed out of necessity and before the deliberative process has terminated (and, in some cases, even started).

It is not difficult to see the adaptive value of presumptions that are oriented to action in the practical sphere. A cognitive agent whose rationality privileges the completion of deliberation over the need to take urgent, self-protective actions is unlikely to survive for long enough to discover the limitations of such rationality.

The cognitive inquiries through which we obtain knowledge of the world and an accurate mental representation of our environment should never be ends in themselves. Rather, the substantial resources that we expend in obtaining information and improving our cognitive fit with the world are only warranted if that information equips us to deal with practical challenges. A rationality which pursues the attainment of complete knowledge but which is blind to practical exigencies is a very dangerous rationality indeed. Presumption is the bridge between agents' cognitive goals and the need for those goals to remain in the service of addressing challenges in the practical sphere. This action-oriented concept reminds us that deliberation which cannot be suspended in order to respond to practical concerns is a particularly limiting cognitive resource.

2.3 Major Informal Fallacies

It emerges that presumption is a particularly versatile epistemic concept which holds considerable promise for a theory of public health reasoning. But unless individual presumptions can be interrelated in logically significant ways, there remains little prospect that a theory of public health reasoning can be developed which will benefit from the versatility of this concept. Presumption must find a logical home if it is to gain any purchase in the reasoning of cognitive agents. That home, I contend, is to be found in a branch of logical inquiry called informal logic. Notwithstanding its relatively short history,[4] informal logic has contributed substantial insights to our understanding of the use of arguments in everyday contexts. One aspect of this logical discipline with particular relevance for our present purposes is a group of arguments called the informal fallacies. Although these arguments have occupied a rather inauspicious position in the history of logic, it will be argued that their logical properties assume new significance in the context of public health reasoning. In this section, we begin to examine those logical properties in a number of prominent informal fallacies. We will also illustrate the use of these arguments in a public health context.

The section will unfold as follows. A historical overview of the fallacies will provide a much needed introduction to this logical area for public health readers with no prior knowledge of these arguments. It is hoped that this same overview will also refresh the knowledge of readers with a background in philosophy. This discussion will chart a remarkable journey that has been taken by the fallacies, beginning with their largely pejorative characterization by logicians of a traditional bent to their recent analysis by informal logicians as facilitative heuristics during reasoning. The transformation in the status of these arguments reflects wider logical developments which have enabled logicians and philosophers to develop non-deductive frameworks for the analysis of the fallacies. Among these frameworks are presumptive and pragmatic analyses of the fallacies. Assessed against presumptive

and pragmatic criteria, many of the so-called informal fallacies appear to be not so fallacious after all. These frameworks will be considered as will the very different analysis of the fallacies that they make possible.

2.3.1 From Historical Antecedents . . .

Philosophical interest in the fallacies can be traced back to Aristotle (384 BC-322 BC) in his Sophistical Refutations. For Aristotle, sophistical refutations are 'what appear to be refutations but are really fallacies instead' (section 1, part 1). He identifies two styles of refutation, one which depends on the language used and the other which is independent of language. Refutations that depend on language include ambiguity, amphiboly, combination, division of words, accent and form of expression. In illustration of amphiboly, Aristotle presents this example in which there is play on the 'double meaning' of the expression sight of: 'There must be sight of what one sees: one sees the pillar: ergo the pillar has sight'. Fallacies which are independent of language include the following seven kinds: (1) that which depends upon Accident; (2) the use of an expression absolutely or not absolutely but with some qualification of respect or place, or time, or relation; (3) that which depends upon ignorance of what 'refutation' is; (4) that which depends upon the consequent; (5) that which depends upon assuming the original conclusion; (6) stating as cause what is not the cause; (7) the making of more than one question into one' (section 1, part 4).[5] In illustration of (4), a refutation that depends upon the consequent, Aristotle states that 'since after rain the ground is wet in consequence, we suppose that if the ground is wet, it has been raining; whereas that does not necessarily follow' (section 1, part 5). For Aristotle, these refutations are little more than fallacies employed by sophists whose aim is 'the semblance of wisdom without the reality':

> [I]t is the business of one who knows a thing, himself to avoid fallacies in the subjects which he knows and to be able to show up the man who makes them [. . .] Those, then, who would be sophists are bound to study the class of arguments aforesaid: for it is worth their while: for a faculty of this kind will make a man seem to be wise, and this is the purpose they happen to have in view. (section 1, part 1)

Many Aristotelian fallacies were to be examined again in the seventeenth century by Antoine Arnauld (1612–1694) and Pierre Nicole (1625–1695) in the Port-Royal Logic.[6] Arnauld and Nicole did not recognize the Aristotelian distinction between fallacies which do and do not depend on language. Instead, they classified fallacies according to the different ways of reasoning ill (so-called sophisms) and bad reasonings which are common in civil life and ordinary discourse. Fallacies in the former category include ignoratio elenchi, begging the question, non causa pro causa,[7] incomplete enumeration,[8] secundum quid,[9] fallacia accidentis, fallacia compositionis, fallacia divisionis (Aristotle's fallacies of accident, composition and

division of words, respectively), and abusing the ambiguity of words. The Port-Royal Logic continues the Aristotelian treatment of these forms as sophisms. In this way, begging the question 'is clearly altogether opposed to true reasoning, since, in all reasoning, that which is employed as proof ought to be clearer and better known than that which we seek to prove' (Third Part, Chap. XIX, Part II, p. 244). Fallacies in the category of bad reasonings which are common in civil life and ordinary discourse include appeals to grounds other than reasons in argument. These grounds include a range of interests, emotions and desires[10]:

> If we examine with care what commonly attaches men rather to one opinion than to another, we shall find that it is not a conviction of the truth, and the force of the reasons, but some bond of self-love, of interest, or of passion (Third Part, Chap. XX, Part I, p. 262–263; italics added).

For the Port-Royal logicians, grounds based on interest and desires rather than the truth should not convince us in argument: 'what can be more unreasonable than to take our interest as the motive for believing a thing? [. . .] it is only the truth which must be found in the thing itself, independently of our desires, which ought to convince us' (Third Part, Chap. XX, Part I, p. 263). Clearly, there is little of logical merit in either sophisms or 'bad reasonings' as far as these seventeenth century thinkers are concerned.

In Book IV of An Essay Concerning Human Understanding, John Locke (1632–1704) introduces four arguments which are recognizable to present-day readers as 'ad fallacies', although Locke does not describe them as such.[11] These arguments are argumentum ad verecundiam, argumentum ad ignorantiam, argumentum ad hominem and argumentum ad judicium. An argumentum ad verecundiam is the appeal to the authority of men during argument: 'The first is, to allege the opinions of men, whose parts, learning, eminency, power, or some other cause has gained a name, and settled their reputation in the common esteem with some kind of authority'. In an argumentum ad ignorantiam, one's adversary in argument is forced to accept a thesis or prove the opposite of it: 'Another way that men ordinarily use to drive others and force them to submit to their judgments, and receive their opinion in debate, is to require the adversary to admit what they allege as a proof, or to assign a better'. In an argumentum ad hominem, some aspect of a man's character, principles or practice is used to defeat his thesis: 'a third way is to press a man with consequences drawn from his own principles or concessions'. An argumentum ad judicium is 'the using of proofs drawn from any of the foundations of knowledge or probability'. It is only the last of these arguments which 'advances us in knowledge and judgment', according to Locke. The ad verecundiam, the ad ignorantiam and the ad hominem may dispose us for the reception of truth without helping us attain it:

> I may be modest, and therefore not oppose another man's persuasion: I may be ignorant, and not be able to produce a better: I may be in error, and another man may show me that I am so. This may dispose me, perhaps, for the reception of truth, but helps me not to it: that must come from proofs and arguments, and light arising from the nature of things themselves, and not from my shamefacedness, ignorance, or error (Book IV, Chapter XVII: Of Reason).

Isaac Watts (1674–1748) describes the same four arguments as Locke in his Logic: or The Right Use of Reason. However, to these arguments he adds argumentum ad fidem ('an address to our faith') and argumentum ad passiones and argumentum ad populum.[12] As well as these 'ad arguments', Watts discusses 'several kinds of sophisms and their solution'. These sophisms include Aristotelian sophistical refutations and later additions to the class of fallacies: ignorantia elenchi; petitio principii; non causa pro causa; fallacia accidentis; secundum quid; composition and division; ambiguity and imperfect enumeration. Watts adopts the now standard treatment of these arguments as types of flawed or 'false argumentation'. In his introduction to the sophisms, he states:

> As the rules of right judgment and of good ratiocination often coincide with each other, so the doctrine of prejudice [. . .] has anticipated a great deal of what might be said on the subject of sophisms: yet I shall mention the most remarkable springs of false argumentation, which are reduced by logicians to some of the following heads (Part III, Chap. III, Sect. I, p. 266).

Yet, we also see Watts undertake some interesting developments of a number of these arguments. For example, in his discussion of ignorantia elenchi he describes a type of argument in which disputants are seen to knock down easily a position which has been falsely attributed to their opponents. We recognize this to be a type of straw man fallacy and, indeed, Watts uses the expression 'images of straw' in his account of this argument.[13] Also, in his account of petitio principii Watts draws a similarity between this fallacy and a fallacy called a circle. Moreover, his discussion foreshadows a concern of John Stuart Mill in A System of Logic when he describes the circle or petitio principii which inheres within the syllogism.[14]

In his Elements of Logic, Richard Whately (1787–1863) begins his account of the fallacies with a strident criticism of the inaccurate language of former writers on the topic. In place of these accounts, which 'have recourse to a loose, vague, and popular kind of language', Whately proposes a logical view of the fallacies. The emphasis of this view of the fallacies is 'a scientific analysis of the procedure which takes place in each' (Book III: Introduction, pp. 168–169). Whately divides the fallacies into those 'in the words' (the conclusion does not follow from the premises) and those 'in the matter' (the conclusion does follow from the premises). Fallacies in the former category can be purely logical or semi-logical, depending on whether the fallaciousness arises from 'the bare form of the expression' or 'the ambiguity of the middle term', respectively. Fallacies in the latter category – material or non-logical fallacies – are of two kinds: premises are such that they should not have been assumed (non causa pro causa and petitio principii[15]) and the conclusion is not the required conclusion but an irrelevant one (ignoratio elenchi). Whately's classification system includes other familiar fallacies such as composition and division, affirming the consequent and the fallacy of interrogations (many questions). An important fallacy which has not been discussed previously is based on analogy. Whately states that there are two kinds of very common error which 'lead to confusion of thought in our use of analogical words'.[16] In these errors we see the fallacy which modern readers recognize as false analogy beginning to take shape.

A category of material or non-logical fallacy which deserves special mention is what we have been calling the 'ad fallacies' – the argumentum ad hominem, argumentum ad verecundiam and the argumentum ad populum, to name just three. In Whately's account, we see the first acknowledgement that certain uses of these arguments are anything but fallacious. He writes:

> There are certain kinds of argument recounted and named by Logical writers, which we should by no means universally call Fallacies; but which *when unfairly* used, and *so far as they are* fallacious, may very well be referred to the present head; such as "*argumentum ad hominem*," [or "personal argument,"] "*argumentum ad verecundiam*," "*argumentum ad populum*," &c. (Book III, Sect. 15, pp. 236–237; italics in original).

Whately makes the point in relation to the argumentum ad hominem but he intends it to apply to the other arguments in this category.[17] Essentially, he argues that there are occasions in which a man should be prepared to admit a conclusion which is 'in conformity to his principles of Reasoning, or in consistency with his own conduct, situation, &c.' (pp. 237–238). A conclusion so admitted is not fallacious but is 'allowable and necessary':

> Such a conclusion is often both allowable and necessary to establish, in order to silence those who will not yield to fair general argument; or to convince those whose weakness and prejudices would not allow them to assign to it its due weight (Book III, Sect. 15, p. 238).

The point about the non-fallaciousness of these arguments remains somewhat undeveloped in Whately's account. However, his discussion nevertheless marks an important break with the hitherto dominant view of these arguments as invariably weak or fallacious forms of argument or reasoning.

John Stuart Mill (1806–1873) devotes the whole of Book V of A System of Logic to a discussion of the fallacies. Mill believes that no philosophy of reasoning can be complete without a theory of bad as well as good reasoning. Bad reasoning involves our being seduced into not observing the 'true principles of induction':

> It is, however, not unimportant to consider what are the most common modes of bad reasoning; by what appearances the mind is most likely to be seduced from the observance of true principles of induction (Book V, Chapter I, Sect. 1).

Given this emphasis on induction, it is unsurprising that inductive fallacies are the focus of Mill's classification system. Mill begins by recognizing a distinction between Fallacies of Inference and Fallacies of Simple Inspection. In the former category he includes erroneous conclusions from supposed evidence. Fallacies of Simple Inspection include cases in which a proposition is believed to be true without any extrinsic evidence either from experience or from general reasoning. This category also includes cases in which simple inspection creates a presumption in favour of a proposition. Within Fallacies of Confusion are included those fallacies which have their source in language, 'whether arising from the vagueness or ambiguity of our terms, or from casual associations with them' (Book V, Chapter II, Sect. 2). The category Fallacies of Induction includes those cases in which the facts on which an induction proceeds are false (Fallacies of Observation) or they are true but do not bear out a conclusion founded on them (Fallacies of Generalization).

Finally, the category Fallacies of Deduction includes 'those modes of incorrect argumentation in which the premises, or some of them, are general propositions, and the argument a ratiocination' (Book V, Chapter II, Sect. 2). This includes argumentation which proceeds from false premises or from premises which are true but which do not support the conclusion. However, the first of these errors, Mill argues, can be included in one of the aforementioned categories. This leaves 'the only class of fallacies having properly their seat in deduction' as those in which the premises do not bear out the conclusion. These cases are 'provided against by the rules of the syllogism' and are called Fallacies of Ratiocination.

As Mill expands his classification system, we see the names of a number of familiar fallacies beginning to appear. For example, under Fallacies of Generalization Mill includes post hoc, ergo propter hoc which arises 'when the investigation takes its proper direction, that of causes, and the result erroneously obtained purports to be a really causal law' (Book V, Chapter V, Sect. 5). Under Fallacies of Confusion, Mill discusses the fallacy of ambiguity, petitio principii and ignoratio elenchi. The 'confusion' in these fallacies consists in misconceiving the import of the premises, in forgetting what the premises are, and in mistaking the conclusion which is to be proved, respectively. Under Fallacies of Ratiocination, Mill addresses à dicto secundum quid ad dictum simpliciter. This fallacy is committed 'when, in the premises, a proposition is asserted with a qualification, and the qualification lost sight of in the conclusion' (Book V, Chapter VI, Sect. 4). One fallacy in particular is worthy of consideration for what it reveals of Mill's attitude towards modes of reasoning which do not attain the standards of induction. That fallacy is false analogy. Mill states:

> This Fallacy stands distinguished from those already treated of by the peculiarity that it does not even simulate a complete and conclusive induction, but consists in the misapplication of an argument which is at best only admissible as an inconclusive presumption, where real proof is unattainable (Book V, Chapter V, Sect. 6).

It is clear that Mill has low regard for reasoning based on presumption on account of its failure to 'even simulate a complete and conclusive induction'. This dismissal of presumption is even more remarkable given Mill's defence of induction, a form of reasoning which has also been maligned, in this case for its failure to attain deductive standards of reasoning and argument. Indeed, it is the privileging of these latter standards which is responsible for the largely negative characterizations of the fallacies in each of the historical contributions that we have examined in this section. We will see in the next section that more favourable conceptions of the fallacies would eventually emerge, but only among those philosophers who were not prepared to uphold the dominance of deduction in logic and reasoning.

2.3.2 . . . to the Present Day

The modern day study of the fallacies is widely held to have commenced with the publication in 1970 of Charles Hamblin's book Fallacies. In this groundbreaking

text, Hamblin rails against the shortcomings of what he terms the 'standard treatment' of the fallacies in most logic textbooks. His frustration with this treatment is clearly evident in the following introductory remarks:

> And what we find in most cases, I think it should be admitted, is as debased, worn-out and dogmatic a treatment as could be imagined – incredibly tradition-bound, yet lacking in logic and historical sense alike, and almost without connection to anything else in modern logic at all. This is the part of his book in which a writer throws away logic and keeps his reader's attention, if at all, only by retailing traditional puns, anecdotes, and witless examples of his forbears (Hamblin 1970: 12).

By way of illustration of the textbook treatment of the fallacies, Hamblin considers an example of amphiboly discussed by Irving Copi (1953) in his Introduction to Logic: 'Save soap and waste paper'. Hamblin remarks of Copi's example that it is not an argument at all. Moreover, he adds that even if an argument could be constructed on the basis of this example, there would be very little likelihood that anyone would be persuaded of its validity. To get a good example of amphiboly as it is defined by the textbooks, Hamblin contends, we would need to find a case in which someone was actually misled by an ambiguous verbal construction. However, Hamblin laments that '[n]one of the examples so far quoted is of this character; and I regret to report that, in the books I have consulted, I have found no example that is any better' (1970: 18).

Hamblin's response to the weaknesses of the standard treatment of the fallacies is to develop a formal dialectic. A formal analysis of rules of dialogue, he contends, offers a unifying framework within which the dialectical flaws of various fallacies may be captured. These rules can prescribe, prohibit or permit dialogue moves by arguers:

> A formal approach [. . .] consists in the setting up of simple systems of precise but not necessarily realistic rules, and the plotting of the properties of the dialogues that might be played out in accordance with them [. . .] Rules may prescribe, prohibit, or permit; may be directed to particular people, who play roles in a dialogue; and may be conditional on any feature of the previous history of the dialogue (Hamblin 1970: 256–257).

Hamblin's account is undoubtedly a more systematic analysis of the fallacies than that which is offered by the standard treatment. However, it still remains wedded to a central assumption of that treatment, that the fallacies are weak or flawed forms of argument which logicians must succeed in outlawing. This can be seen, for example, in Hamblin's treatment of petitio principii. Hamblin begins with a brief description of the structure of two dialectical forms of this fallacy:

> The simplest possible such argument is 'Why A? *Statements* A, A⊃A'; and, if S and T are statements equivalent by definition, another is 'Why S? *Statement* T. Why T? *Statement* S' (1970: 271; italics in original).

It is Hamblin's aim to prohibit these argument sequences. To this end, he proposes the following rules:

> 'Why S?' may not be used unless S is a commitment of the hearer and not of the speaker.
>
> The answer to 'Why S?', if it is not 'Statement – S' or 'No commitment S', must be in terms of statements that are already commitments of both speaker and hearer (1970: 271).

In relation to the argument sequence 'Why S? Statement T. Why T? Statement S', the second of these rules guarantees that where statement T is offered as a justification of S, both T and T ⊃ S must already be among the commitments of the speaker and the hearer of the dialogue. In such a case, however, the further question Why T? is prohibited by the first of these rules – the questioner is prohibited from asking a question about a statement to which he is already committed. For Hamblin, it is clear that circular argument of the type found in petitio principii should not be tolerated in an improved treatment of the fallacies and that it is the purpose of formal dialectic to prohibit such argument, amongst other things.

Hamblin's treatment of the fallacies achieved a much needed resurgence of interest in these arguments and spawned the development of new frameworks for their analysis.[18] Yet, it remained committed to the largely pejorative characterization of these arguments that had dominated historical accounts of the fallacies. Hamblin's continuation of this characterization, despite his vehement criticism of the tradition that produced it, can be traced to his adherence to deductivism in logic. Deductivism is the widely held, though often implicit, view that the only way to do logical analysis is to resort to deductive techniques and norms (Johnson 2011).[19] Although this is not the context in which to undertake a detailed discussion of deductivism – the reader can do no better than Johnson's paper for this discussion – some account of deductivism and its impact on fallacy analysis is still warranted. For it is not an exaggeration to say that it was dissatisfaction with deductivism and a desire to do logical analysis differently which brought informal logic into existence and with it an innovative approach to the study of fallacies.

The norms implicit in the deductivist attitude to the study of logic are captured by the soundness doctrine, the idea that a good argument is one that is deductively valid and has true premises. Certain aspects of Hamblin's treatment appear to challenge this doctrine. For example, he is seen to argue in Fallacies that truth is neither a necessary nor a sufficient condition for good premises (Hamblin 1970: 236ff.). However, Hamblin's proposal of a formal dialectic nevertheless distinguishes him as a theorist who yields 'logic to the formalists, to those who wish to idealize or normativize formal, deductive logic' (Johnson 2011: 30). Hamblin is by no means alone in this regard. As Johnson (2011: 23) observes, deductivism is deeply entrenched in the history of philosophy. In the present context, we are concerned with the effect of deductivism on one corner of logic, the corner that examines weak or fallacious argument. For it is here that one of the most pernicious consequences of deductivism is to be found. That consequence can be formulated in the following terms: if the soundness doctrine is the standard of a good argument, then most of the arguments that people use in their daily affairs (indeed, in philosophy itself) are fallacies. A deductivist attitude commits its holder to endless disappointment and a sense that many (or most) arguments that we advance and find rationally compelling are second best or inferior to a deductive ideal of argument.[20] And because we are prejudiced from the outset to find these arguments weak, it is unsurprising that we should describe so many of them as fallacies when, in fact, all we have done is apply an incorrect (that is, deductive) standard to their evaluation. This has been the fate of many of the arguments which we now routinely identify as fallacies.

At the same time as most philosophers and logicians were blind to their own deductivism, a new wave of logicians was not prepared to acquiesce in the deductive ideals of their predecessors. In the 1970s, undergraduate students in North American universities increasingly began to challenge the relevance of a logic course that upheld a deductive ideal of argument. Such a course, students complained, did little to prepare them to make and assess arguments on all the important issues of the day. Moreover, the instructors of these courses appeared impotent to explain their relevance to the political, social and moral issues that students were required to evaluate in their daily lives. Howard Kahane (1971: v) recalls the dilemma that confronted logic instructors at this time:

> In class a few years back, while I was going over the (to me) fascinating intricacies of the predicate logic quantifier rules, a student asked in disgust how anything he'd learned all semester long had any bearing whatever on President Johnson's decision to escalate again in Vietnam. I mumbled something about bad logic on Johnson's part, and then stated that Introduction to Logic was not that kind of course. His reply was to ask what courses did take up such matters, and I had to admit that so far as I knew none did. He wanted what most students today want, a course relevant to everyday reasoning, a course relevant to the arguments they hear and read about race, pollution, poverty, sex, atomic warfare, the population explosion, and all the other problems faced by the human race in the second half of the twentieth century.

In the end, developments in the classroom were to prove instrumental in dislodging formal, deductive logic from its position of dominance in logic and in ushering in a new kind of logical study. That study was concerned to examine the use of arguments in context over formal relations between propositions, the latter the object of analysis of formal, deductive logic. This quite different emphasis of informal logic, as it became known, had significant implications for the study of fallacies. Specifically, when viewed in the contexts in which they were advanced, many so-called weak or fallacious arguments appeared to be not so fallacious after all. Historical certainties about the arguments that constituted the fallacies soon began to unravel, with analyses of non-fallacious variants of the informal fallacies appearing in journals that bore the name of this new area of logical study.[21] Spearheading this more positive characterization of the fallacies were John Woods and Douglas Walton, two logicians who have gone on to analyse non-fallacious variants of most of the informal fallacies.[22] These analyses emphasized presumptive reasoning and plausible argument (Walton 1996a). At the same time, the evaluation of argument no longer privileged deductive and inductive criteria and was just as likely (or more likely) to consider pragmatic factors relating to the context of argument (Walton 1995a, 1996b). These remarks of Walton (1996a: 153) reveal the close interrelationship that has developed between presumptive reasoning, positive characterizations of the informal fallacies and pragmatic evaluative criteria since the emergence of informal logic:

> 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 [. . .] Presumptive reasoning enables practical reasoning to go ahead in variable circumstances where knowledge is incomplete.

One of the contexts in which the argument from ignorance has been shown to function non-fallaciously is the domain of public health, where practical constraints relating to the availability of evidence and the urgency of health measures effectively warrant a range of such arguments (Cummings 2002, 2004, 2009, 2010, 2011, 2012b). Having demonstrated the positive epistemic attributes of informal fallacies in certain contexts, it was not long before theorists began to conceive of them as facilitative heuristics during reasoning. This most recent development in fallacy theory is evident in Walton (2010), although it is in the work of Cummings (2012c, 2013a, b, 2014a, b, c, d, e) that the idea of fallacies-as-heuristics has been experimentally tested for the first time. It will be instructive to examine this approach further in the present context, as it marks the point of departure for the analysis of the informal fallacies that will be pursued in subsequent chapters.

According to Walton (2010), most of the informal fallacies are associated with an argumentation scheme and a corresponding parascheme. The argumentation scheme is part of a newer (in evolutionary terms) cognitive system which operates in a controlled, conscious and slow manner. This scheme asks critical questions of arguments, questions which are likely to expose logical weaknesses, if such weaknesses exist. The parascheme is a shorter version of the argumentation scheme. It is part of an older cognitive system which uses fast and frugal heuristics to achieve solutions to problems. Some of these heuristics involve jumping to conclusions, a cognitive strategy that can work well enough on some occasions but results in errors on other occasions. Walton demonstrates this heuristic view of the fallacies in relation to the argument from expert opinion (argumentum ad verecundiam). The parascheme of this argument omits assumptions, exceptions and one ordinary premise that are integral to the corresponding argumentation scheme. By neglecting these aspects, which confer a slow, deliberative character on reasoning, an arguer can employ a fast heuristic to the effect ‘if it’s an expert opinion, defer to it’ (Walton 2010: 170). This heuristic is depicted in Fig. 2.1.

In Cummings (2014a), it was argued that certain drawbacks attend Walton’s framework. One drawback is that a number of informal fallacies, which have been shown to function as rationally warranted heuristics in certain contexts of use, are not amenable to the type of analysis proposed by Walton. Petitio principii or begging the question is one of several fallacies which ‘do not appear to fit specific argumentation schemes, or benefit directly from schemes when it comes to analyzing them’ (Walton 2010: 175). Also, Walton conceives of heuristic reasoning in terms of the bypassing of critical questions which have the potential to reveal logical flaws in argument. However, on the view of fallacies-as-heuristics discussed in Cummings (2014a), heuristics are not portrayed as the failure to address certain critical questions. Indeed, there was evidence in the experimental study undertaken in Cummings (2014a) that subjects do pose and respond to these very questions. Rather, heuristics are characterized in terms of mental shortcuts through expert knowledge domains which lie beyond the cognitive grasp of the lay person. Heuristics on this conception are bypassing a lack of knowledge, not the critical questions that attend argumentation schemes à la Walton. They are thus serving as an adaptation of our rational resources to the uncertainty that attends many cognitive deliberations, at least in the public health domain.

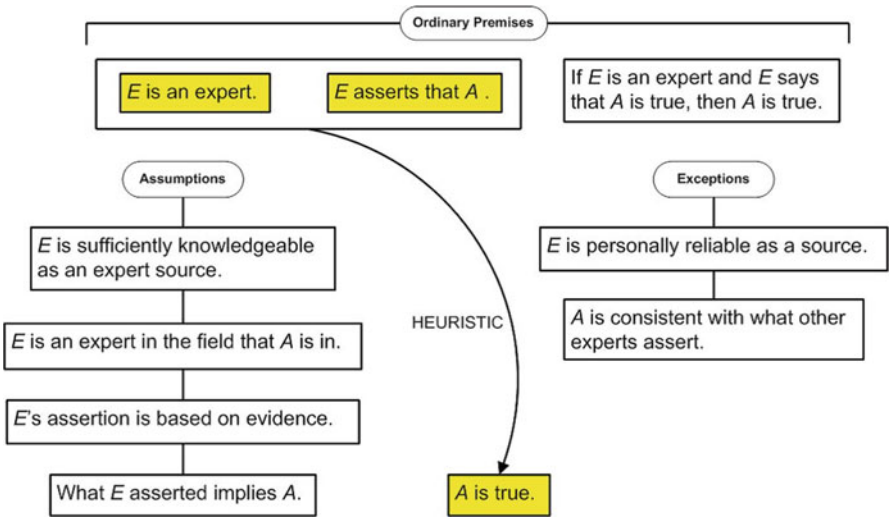

Fig. 2.1 Heuristic of argument from expert opinion, taken from Walton (2010: 170) (The permission of Douglas Walton and the editors of Informal Logic to reproduce this diagram is gratefully acknowledged)

At the beginning of this section, it was described how the fallacies had undertaken a remarkable journey from their historical origin as weak or bad forms of reasoning and argument to their present-day characterization as facilitative cognitive heuristics. A once despised set of arguments has emerged from relative logical obscurity to become a topic of interest to theorists in cognitive science and beyond. But the journey of the informal fallacies is still far from complete. The challenge now is to develop a theoretical framework of these arguments that succeeds in capturing their logical merits in the adverse epistemic conditions that attend reasoning in a public health context.

2.4 Summary

It has been argued in this chapter that we must begin the task of developing a theory of public health reasoning by drawing on the concepts of a number of philosophical disciplines. These disciplines include most prominently epistemology and logic, although contributions from the philosophy of science and the philosophy of mind are also not without relevance. Epistemology can contribute the highly versatile concept of presumption to a theory of public health reasoning. This chapter examined five features of presumption that serve this concept well in the types of cognitive inquiries that are routinely encountered in a public health context. These features are the defeasibility of presumption, its rational justification and context

sensitivity, its lowly epistemic status and its orientation to action. However, it was argued that presumption needs to find a logical home if it is to gain any purchase in the reasoning of cognitive agents. That home is to be found in a group of arguments known as the informal fallacies. The second part of the chapter charted the journey of these fallacies, from their characterization as flaws or errors in reasoning in the logical treatises of thinkers such as Aristotle and Mill to their recent analysis as cognitive heuristics. However, it was cautioned that this remarkable journey of the fallacies is unlikely to be complete. For these same arguments could yet make their most significant and enduring contribution to logic as facilitative heuristics in a theory of public health reasoning.

Notes

1. Some so-called legal presumptions are indefeasible. However, as Rescher (2006) points out, these indefeasible presumptions are presumptions 'in name only'; they actually have the status of legal postulates: 'To be sure, certain legal principles are sometimes characterized as "conclusive presumptions" (for example, that a child of less than seven years cannot commit a crime or that a crime exists only with establishment of circumstances "beyond reasonable doubt"). But these indefeasible "presumptions" are presumptions in name only – in actual fact they are incontestable legal postulates' (2006: 5).
2. According to Rescher (1977: 56), '[w]e begin by provisionally accepting certain theses whose initial status is not that of certified truths at all, but merely that of plausible postulations, whose role in inquiry is (at this stage) one of regulative facilitation. Eventually these are retrovalidated (retrospectively revalidated) by the results of that inquiry. At that stage their epistemic status – though not their content – changes. In the first instance these presumptions have a merely provisional and regulative standing, though in the final instance they attain a suitable degree of factual-constitutive substantiation' (italics in original).
3. The central role of presumptions in practical rationality or reasoning is acknowledged by Walton (2000: 139): 'Practical reasoning involves an agent in a given set of present but changeable circumstances, trying to select a prudent course of action among a set of possible alternative courses of action. This sort of reasoning involves an attempt to decide what will be the most prudent choice as far as the future is concerned. But the future is never certain. Hence practical reasoning involves presumptions in the form of hypothetical guesses' (italics added).
4. Groarke (2011) states that informal logic originates in North America in the 1970s. Although it is predated by Hamblin's (1970) book Fallacies and Toulmin's (1958) text The Uses of Argument, Johnson and Blair's (1977) textbook Logical Self-Defense is credited by Groarke as the start of work in informal logic proper.

5. Several of these fallacies were given specific names by Aristotle or by later logicians and philosophers. In this way, the fallacy in (2) acquired the name secundum quid et simpliciter during the Middle Ages. Aristotle used the label ignoratio elenchi of (3) and begging the original point or question of (5). Today, we describe (4) as the formal fallacy of affirming the consequent, while (7) is the fallacy of many questions.
6. Arnauld and Nicole were philosophers and theologians who were associated with Port-Royal Abbey, a centre of the Catholic Jansenist movement in seventeenth century France.
7. Non causa pro causa is defined as 'taking for a cause that which is not a cause'. Included under this sophism is another fallacy known as post hoc, ergo propter hoc. This is the fallacy of concluding that because something follows a thing or event that it must be caused by it.
8. Of incomplete enumeration, the Port-Royal Logic says: 'There is scarcely any vice of reasoning into which men fall more easily than that of making imperfect enumerations, and of not sufficiently considering all the ways in which a thing may exist, or take place, which leads them to conclude rashly, either that it does not exist, because it does not exist in a certain way, though it may exist in another, or that it exists in such and such a way, although it may still be in another way, which they have not considered' (Third Part, Chap. XIX, Part IV, p. 252).
9. Secundum quid or a dicto secundum quid ad dictum simpliciter, to give it its full name in the Port-Royal Logic, involves 'passing from what is true in some respect, to what is true absolutely'.
10. These 'bad reasonings' bear more than a fleeting resemblance to the 'ad fallacies' which Locke is generally credited with first characterizing as fallacies. These fallacies include argumentum ad hominem (argument against the man), argumentum ad baculum (appeal to force) and argumentum ad verecundiam (appeal to authority), amongst others.
11. Locke does, however, use the term 'fallacies' in a discussion of the syllogism: 'Another reason that makes me doubt whether syllogism be the only proper instrument of reason, in the discovery of truth, is, that of whatever use mode and figure is pretended to be in the laying open of fallacy, [. . .] those scholastic forms of discourse are not less liable to fallacies than the plainer ways of argumentation . . . ' (Book IV, Chapter XVII: Of Reason).
12. Watts states that 'when an argument is borrowed from any topics which are suited to engage the inclinations and passions of the hearers on the side of the speaker, rather than to convince the judgment, this is argumentum ad passiones, an address to the passions; or if it be made publicly, it is called ad populum, or an appeal to the people' (Part III, Chap. II, Sect. VIII, p. 265).
13. 'Disputers, when they grow warm, are ready to run into this fallacy [ignorantia elenchi]; they dress up the opinion of their adversary as they please, and ascribe sentiments to him which he doth not acknowledge, and when they have with a great deal of pomp attacked and confounded these images of straw of their

own making, they triumph over their adversary, as though they had utterly confounded his opinion' (Part III, Chap. III, Sect. I, p. 267).

14. 'That sort of fallacy which is called a Circle is very near a-kin to the petitio principii; as, when one of the premises in a syllogism is questioned and opposed, and we intend to prove it by the conclusion: or, when in a train of syllogisms we prove the last by recurring to what was the conclusion of the first' (Part III, Chap. III, Sect. I, p. 268).
15. Like Watts, Whately relates petitio principii to arguing in a circle, adding that 'the greater the circle, the harder to detect' (Book III: Sect. 3, p. 179).
16. 'There are two kinds of error, each very common – which lead to confusion of thought in our use of analogical words: i. The error of supposing the *things themselves* to be similar, from their having *similar relations* to other things. ii. The still commoner error of supposing the Analogy to *extend further* than it does; [or, to be more *complete* that it really is;] from not considering *in what* the Analogy in each case consists' (Book III, Sect. 10, p. 206; italics in original).
17. 'The fallaciousness depends upon the *deceit*, or attempt to deceive. The same observations will apply to "*argumentum ad verecundiam*," and the rest' (Book III, Sect. 15, p. 239; italics in original).
18. As the following comments indicate, Mackenzie was directly influenced by Hamblin to pursue a dialogical analysis of the fallacies: '. . . the study of dialogue should be the context within which we consider any logical question. This I take to be the position of Hamblin and of the tradition of dialogical inquiry initiated by him' (Mackenzie 1985: 329). Mackenzie (1985) sees his own formulation of 'a dialogical system designed to explain the fallaciousness of question-begging arguments, as a contribution toward this [Hamblin's] project' (329).
19. Johnson (2011: 20) uses the expression 'latent deductivism' to capture the implicit character of this view: 'By "latent deductivism", I mean to refer to any view of which it can be said that the view makes sense, or makes proper sense, only if one assumes a deductivist view. Latent deductivism privileges deductive reasoning (without always arguing for it)' (italics added).
20. Hamblin (1970: 43) reveals his deductivist attitude when he remarks of the argumentum ad verecundiam that it 'may leave something to be desired where deductive validity is concerned but the premisses, if true, do at least lend the conclusion support'.
21. The journal Informal Logic appeared for the first time as the Informal Logic Newsletter in July 1978. It was nearly ten years later in March 1987 that another key journal in the field Argumentation first appeared.
22. These theorists characterized non-fallacious variants of petitio principii (begging the question), argumentum ad ignorantiam (the argument from ignorance), argumentum ad baculum (the argument from the stick or appeal to force), and argumentum ad hominem (argument against the man), amongst many other informal fallacies (Walton 1985a, b, 1987, 1991, 1992a; Woods 1995, 2004, 2007, 2008).