

ON JOHN STUART MILL'S NOTIONS OF LOGIC AND ARGUMENT¹

Xavier de Donato Rodríguez

Universidad de Santiago de Compostela²

ABSTRACT

My aim in this paper is to discuss Mill's notions of logic and argument and to highlight the epistemic dimension that for Mill has every argument and that, it is in the light of this epistemic dimension, that an argument should be assessed. By taking into account these considerations, I focus on his criticism against deductive arguments to the effect that they commit the fallacy of begging the question. I try to show that this idea relies on his radical empiricism and argue that he is wrong. He particularly fails to recognize how we can gain knowledge from deductive arguments, though their conclusions are already contained in the premises. Finally, I point out the fact that, by his insisting in the epistemic dimension of arguments, Mill's ideas are closer to those of argumentative theorists.

Key words: J.S. Mill, logic, deduction, argument, argumentation, begging the question.

1 [Recepción: 13 de abril de 2015. Aceptación: 13 de mayo de 2015.]

2 This paper has received financial support from the research program FFI2013-41415-P "La función explicativa de los objetos abstractos: naturaleza y cognoscibilidad" of the Spanish Ministry of Economy and Competitiveness. I want to thank, for their comments and suggestions, the members of the audience of the Third SIEU International Seminar on Utilitarian Studies, held in Santiago de Compostela (Spain) on June 26-27, 2014 with the title "New Trends in the Research on John Stuart Mill". Of course, I remain responsible for all the mistakes this text may contain. Some of the ideas presented in this article are related to another article published under the title of "La noción de argumento y el problema de Mill" in *Revista Iberoamericana de Argumentación* 6 (2013) 1-13.

RESUMEN

Mi propósito en este artículo es discutir las nociones de lógica y de argumento de John Stuart Mill y subrayar que, para Mill, todo argumento tiene una dimensión epistémica a la luz de la cual debe ser evaluado. Sobre la base de estas consideraciones, me ocupo de su crítica de los argumentos deductivos, los cuales incurrirían en la falacia de petición de principio. Intento al mismo tiempo mostrar que esta idea descansa en su empirismo radical y arguyo que está equivocado. En particular, cuando no reconoce cómo podemos obtener conocimiento a partir de argumentos deductivos a pesar de tratarse de inferencias no ampliativas. Finalmente, señalo cómo su insistencia en la dimensión epistémica de los argumentos lo acerca a la concepción amplia de la lógica de los teóricos de la argumentación.

Palabras clave: J.S. Mill, lógica, deducción, argumento, argumentación, *petitio principii*.

1. INTRODUCTION

In general, John Stuart Mill's *A System of Logic* (henceforth *SL*) has largely been conceived as irrelevant for modern logic. Famously, Russell dismissed Mill's contribution to logic outside the scope of induction with these severe words: "Everything that Mill has to say in his *Logic* about matters other than inductive inference is perfunctory and conventional." (Russell 1951, 123). There are mainly two reasons for this dismissal: (i) the fact that Mill's sense of 'formal logic' reduces to Aristotle's syllogistic, and (ii) Mill's naturalism about logic (and mathematics). These were also the reasons why Frege and Russell, the main founders of modern logic, remained reluctant to Mill's ideas, neglected his contributions to the theory of reasoning and even criticized some of his theses on logic and mathematics. Nevertheless, the recent interest in informal logic, which is growing more and more in the last decades, has led to a positive reconsideration of Mill's contribution to logic and theory of argumentation, similarly to what occurred in the philosophy of language when Kripke put again the Millian theory of names in the middle of the philosophical discussion. The nineteenth century was when modern logic was born and many authors still favored an Aristotelian conception of logic. As Scarre has said, "[i]t is, perhaps, tempting to think that had Mill been sympathetic to the efforts of the early

symbolic logicians he might have achieved even greater profundity in his philosophical speculations on deductive logic". (Scarre p. 7). It is nonetheless very important to keep in mind that the significance of Mill's *SL* "needs to be assessed in the light of [his] broad purpose of vindicating an empiricist theory of knowledge." (Scarre p. 6). Not only that, as I try to show later in this paper, it needs to be evaluated in the context of the growing interest in informal logic and theory of argumentation (see Hansen 2014 for a recent defence of Mill's ideas in terms of the theory of argumentation). In the present paper, I aim at discussing Mill's notions of logic and argument and focus on his idea that deductively valid arguments commit the fallacy of *petitio principii*. I try to show that this idea relies on his radical empiricism and argue that he is wrong. He is nevertheless correct in highlighting the epistemic dimension of arguments, though fails to recognize how we can gain knowledge from deductive arguments, though their conclusions are already contained in the premises. To say that deductive arguments ultimately rely on inductive inferences is even compatible with saying that deductive arguments are probative of their own. In fact, the *petitio* objection is just another way to show that deductive inferences are demonstrative.

2. MILL'S NOTIONS OF LOGIC AND ARGUMENT

As Scarre (p. 18) recalls, Richard Whately's *Elements of Logic* (1826) was the source of inspiration for Mill's first reflections on logic. He wrote a review of the book for the *Westminster Review* in 1828. At that time, he showed total confidence in deductive logic (syllogistic)—syllogistic reasoning was *the* art of reasoning—and thought that induction was not a real inference, but rather a mere method of collecting and summarizing data (see Scarre , p. 18). It was later, when he prepared his masterpiece on the topic, that he changed his view and even rejected deduction as a real inference. The thesis turns then out to be just the opposite: all real inferences consist of inductions. But it is not easy to interpret Mill's position regarding the nature and function of logic adequately. In fact, there is, in Mill's *SL*, an equivocal conception of logic. Sometimes he thinks of logic as an art, sometimes as a science. Sometimes he regards logic as studying psychological processes, sometimes as studying the object of these processes As Hansen (2014, 192) points out, Mill follows Whateley in considering logic both as a science and as an art: as a science,

logic is the study of mental processes, as an art, it dictates the rules for reasoning well³. On the one hand, logic comprises formal logic. On the other, it also includes the study of reasoning and argumentation in a broad sense and, above all, the study of knowledge. It has then an *epistemological* nature. According to Mill, logic, considered as a broad discipline, is basically the study of how to progress from known truths to unknown (McCloskey 1971, 49). Logic deals with evidence and (inferred) truth, it deals with how to treat information, with how to advance from certain information to another not contained in the former (i.e. how to produce ampliative, inductive inferences), and in general with how to *judge*. It is remarkable how Mill confuses two notions we are very aware not to confound nowadays: proof and evidence, but he indeed mixes up both concepts. In the introduction of *SL*, he says, for example: “[l]ogic is not the science of Belief, but the science of Proof, or Evidence.” (Mill 1843, p. 9). He says also: “[l]ogic neither observes, nor invents, nor discovers; but judges.” (Mill 1843, p. 10). The modern reader would consider more convenient to be more explicit at this point, because these are very general and ambiguous characterizations. He is a little bit more explicit later in the same text, when he claims: “[l]ogic [...] is the science of the operations of the understanding which are subservient to the estimation of evidence: both the process itself of advancing from known truths to unknown, and all other intellectual operations in so far as auxiliary to this.” (Mill 1843, p. 12). Apart from the ambiguity in talking about “intellectual operations”, again, it is pretty clear that Mill thought of logic as focusing on ampliative inference. At the same time, Mill gives to logic an essential and primary role in the organization of knowledge: “[l]ogic is the common judge and arbiter of all particular investigations.” (Mill 1843, p. 10). Logic appears here as a science of sciences, as an art of arts. It is

3 See Godden (2005) for a discussion on Mill’s alleged psychologism in logic. Godden argues in this paper that Mill theory fails to escape from a psychologist foundation. See Skorupski (1989, 164-165) for the opposed idea. In my view, we do not need to conclude that Mill was a psychologist. We can consistently maintain that Mill’s theory is just empiricist, in accordance with Scarre’s (1989) interpretation. Skorupski (1989) also presents an interesting way of reconciling Mill’s naturalism with his phenomenalist conception of mind. Mill himself says: “Logic has no interest in carrying the analysis beyond the point at which it becomes apparent whether the operations have in any individual case been rightly or wrongly performed.” (Mill 1843, 12-13). See also chapters 2, 5, and 9 of Loizides (ed. 2014).

primary in the sense that logic is presupposed in *all* science, in all discipline. This essential and primary role corresponds to logic in a broad sense that includes the analysis of ampliative inferences as well as syllogistic reasoning and the study of fallacies.

As we have said, Mill's *SL* focuses on ampliative inferences, but this is because, according to Mill (at least at the mature phase of his work), logic (and mathematics as well) contains mostly *real* propositions/inferences. What should we understand here by 'real'? Mill divides both propositions and inferences into two disjoint sets: *real* and *verbal*. Verbal propositions/inferences are analytic, *a priori* propositions/inferences and, hence, are void of genuine informational content. And real propositions/inferences are empirical, synthetic, or *a posteriori* propositions/inferences. One of the most important theses lying at the base of Mill's radical empiricism is that, for him, logical and mathematical knowledge are grounded on inductive reasoning. For Mill, all 'deductive' sciences are really inductive. In fact, he excludes deductions from the category of inference. His inductivism becomes blatantly obvious when he says that "[a]ll inference, consequently all proof, and all discovery of truths not self-evident, consists of inductions, and the interpretation of inductions" (Mill 1843, Book III, Chap. 1, p. 284).

Before we can pass to the next section, it is important to emphasize that Mill establishes a distinction between what he calls, following part of the contemporary literature, 'formal logic' and logic 'in the widest sense'. Formal Logic is only a very subordinate part of logic, "not being directly concerned with the process of Reasoning or Inference in the sense in which that process is a part of the investigation of Truth." (Mill 1843, Book II, Chapter 3, § 9, p. 206). The aim of formal logic is not truth, but consistency. It includes analytic transformations of propositions, syllogisms, and arguments only wrongly called 'inductive', in which an apparent generalization is obtained as an abridged formulation of cases all of which are already known individually. This amounts to say, formal logic includes for the most part purely verbal inferences, and this means that it provides no real knowledge. Its aim is an investigation of the formal process of ratiocination, or reasoning with syllogisms. But logic *in the wide sense* contains real propositions and real inferences as it deals with ampliative reasoning. Even the law of contradiction and the law of excluded middle are seen by Mill as generalizations from the experience and, then, real (non-verbal) propositions (see Mill

1843, Book II, Chapter 7, § 5, pp. 276-279; see also Skorupski 1989, 147). This leads Mill to the thesis that, strictly speaking, there is no *a priori* knowledge.

As far as the notion of argument is concerned, Mill does not provide an explicit definition of argument, but from the passages in *SL* in which he refers to the notion it becomes clear that he has two concepts in mind: on one side, argument is understood as a logical relation between propositions; on the other, it is conceived as an epistemological relation. Arguments are seen as a means by which we, rational subjects, are allowed to extract knowledge from a certain set of premises. This ambiguity does not seem problematic at all. It is important to keep in mind that 'argument' is said in many ways. The logical notion involves seeing an argument as a set of propositions one of which is claimed to follow from the others. The epistemic notion involves conceiving an argument as a kind of relation between propositions by means of which certain evidence is provided in order to support some conclusion. Clearly, the first notion does not involve subjects. Arguments are valid (or invalid) independently of the existence of subjects (rational minds) capable of recognizing their validity (or invalidity). In principle, the second notion does not involve subjects either. We can speak of the relation of epistemic support between propositions without making reference of subjects and the situations in which they are involved, though in most interesting cases we will need to assess the relation by taking the context into account. A third notion however considers arguments as speech acts and presupposes the existence of subjects and the contexts in which arguments are presented. According to this notion an argument is a speech act proffered by a subject and directed to an audience with the intention of convincing that audience of some conclusion given certain premises. Of course, not every argument is of this sort. There can be different purposes of an argument. An argument may well be used in order to find a better grounding for a proposition which is already believed. The aim is here not to convince someone of the truth of the proposition, but rather to show how that proposition, which is already believed, follows from more fundamental beliefs (these more fundamental beliefs could be the axioms of a certain system).

We can summarize all this by providing three different definitions of an argument:

Def1. An *argument_L* is a tuple $\langle P_1, \dots, P_n, C, R \rangle$ containing a series of propositions such that one of them, the conclusion (C), follows from the others (P_1, \dots, P_n), a number n of premises, via a certain relation of inference (R), that can be deductive, inductive, etc.

Def2. An *argument_E* is a series of propositions such that those called 'premises' are alleged to be reasons to believe the proposition called 'the conclusion'.

Def3. An *argument_p* is a speech act that a certain subject S proffers in front of a certain audience and given a certain epistemic context aiming at convincing the audience that a certain conclusion follows or receives justification or epistemic support from the premises.

In Mill's work, definitions 1 (let us call it 'logical') and 2 (let us call it 'epistemic') are implicit, whereas definition 3 (let us call it 'pragmatic') does not seem to have a relevant role in his conception, though in his treatment of fallacies (in *SL* Book V) he sometimes puts the arguments into context and even seems to take into account the audience towards which they are directed (at least in some cases of fallacies). He also warns us from arguers that use argumentation intending to deceive (Mill 1843, p. 744).

Definitions (1)-(3) respectively correspond to three notions of argument that must be carefully distinguished. A certain instance of an argument can be considered from the point of view of each of these characterizations (as a logical relation, as an epistemic relation, and as a speech act). Logic has to determine if the argument is valid. Epistemology has to determine if the premises are good reasons to believe in the conclusion. Finally, the argument is to be assessed as a speech act in its dialectic dimension. We must evaluate if it responds to the requirements of the audience in an adequate manner and if it is relevant in the context in which it is proffered. As we are going to see, Mill sees arguments not only from the strict point of view of logic, but also from an epistemic perspective. This is essential in order to understand his conception of deduction and the way in which he argues against syllogisms as arguments that beg the question. We are now in a position to examine Mill's view of syllogistic process, or deductive reasoning, and see how it is related, for Mill, to the fallacy of begging the question.

3. SYLLOGISMS AND THE FALLACY OF BEGGING THE QUESTION

We have seen that in Mill's work we can implicitly distinguish two notions of argument: the logical and the epistemic. As we shall seem, neither according to the logical notion nor according to the epistemological notion beg deductive arguments the question. Notwithstanding, Mill maintains that deductive arguments (syllogisms) can be said to commit the fallacy of *petitio principii* (i.e. they beg the question). We begin with by quoting two famous passages:

“It is universally acknowledged—says Mill—that a syllogism is vicious if there be anything more in the conclusion than was assumed in the premises. But this is, in fact, to say, that nothing ever was, or can be, proved by syllogism, which was not known or assumed to be known before. Is ratiocination, then, not a process of inference? And is the syllogism [...] not really entitled to be called reasoning at all? This seems an inevitable consequence of the doctrine, admitted by all writers on the subject, that a syllogism can prove no more than is involved in the premises.” (Mill 1843, p. 183).

And something later in the text, he adds:

“Logicians persisted in representing the syllogism as a process of inference or proof; though none of them has cleared up the difficulty which arises from the inconsistency between that assertion, and the principle, that if there be anything in the conclusion which was not already in the premises, the argument is vicious.” (Mill 1843, p. 185).

Briefly speaking, Mill is here rejecting the orthodox justification of deduction. As Skorupski (1989, 106) points out, for Mill, if we take this kind of justification seriously, it would make all deductively valid arguments fallacious. Mill's point is that if deductive arguments serve to prove the conclusion (and this is, in Mill's terms, the only way that they can be considered inferences), then they must state something in the conclusion that there was not already in the premises. But this would make them deductively invalid. So, the only way that they can become inferences is being deductively invalid, and if they are deductively valid, then they are not inferences and, hence, they cannot prove anything. So, deductive arguments cannot be inferences and, hence, cannot provide knowledge.

Mill's famous example is the classical syllogism in *Barbara*: (i) All men are mortal, (ii) Socrates is a man, therefore (iii) Socrates is mortal. According to Mill (1843, p. 184), that Socrates is mortal is presupposed in the universal premise, All men are mortal. “[W]e cannot be assured—says Mill—of the mortality of all men, unless

we are already certain of the mortality of every individual man” (ibid.). That a particular person is mortal is not known by observation. It is known from the well established general fact that all men are mortal. It is true—says Mill following Archbishop Whateley—that when we assert the general premise, we are implicitly asserting the conclusion, we assert it by implication. According to Mill, this can only mean that we assert it unconsciously, we are not aware of it. But ought we not to have known the conclusion in order to have the necessary warrant to affirm the general premise? Mill has here in mind the epistemic notion of argument. The premises of an argument should provide reasons to believe the conclusion. In those cases in which the conclusion is already believed (think in the case of abductive and hypothetical-deductive arguments), we can say that the aim is to provide better reasons to believe it (for a statement that we know only from observation or by intuition we can show, for example, how it follows from some of our axioms, laws,...). In any case, according to this notion of argument, the premises should give reasons to believe the conclusion. But if the conclusion is already contained in the premises in the sense that, in order to know (some of) the premises, we need to know in advance if the conclusion is true, then these arguments (those in which the conclusion is already informationally contained in the premises) commit the fallacy of begging the question.

What does it mean that an argument begs the question? There are two usually related concepts: that of a circular argument, and that of begging the question. Circularity (Mill says “reasoning in a circle”) is conceived by Mill as a stronger form or variety of begging the question. It is a case in which it is implied “an actual attempt to prove two propositions reciprocally from one another; and is seldom resorted to, at least in express terms, by any person in his own speculations, but is committed by those who, being hard pressed by an adversary, are forced into giving reasons for an opinion of which, when they began to argue, they had not sufficiently considered the grounds.” (Mill 1843, p. 821). Nowadays, we can distinguish different notions of circularity: including that of arguing in circles and the epistemological notion of a circular argument. The mere inclusion of the conclusion among the premises (i.e. arguments of the form: “ p , therefore p ”) is seen as an obvious form of circularity (though, from a deductive point of view, the argument is of course valid). If we are in search of a reason to believe that p , we cannot simply re-

peat that p , as if p could justify itself. The epistemological notion of circularity is not so evident. Jackson (1987, 110-111) has developed an epistemological notion of the *petitio principii* ($p.p.$) fallacy. An argument $\langle P_1, \dots, P_n, C \rangle$ commits $p.p.$ iff there is at least a premise P_i and a piece of evidence E_i for P_i such that it is irrational to believe $\sim C$ and that P_i supports P_i . In other words, the truth of the conclusion is presupposed in order to guarantee one of the premises. This is a kind of epistemic or justificatory circularity according to which in order to know (or to find a support for) one of the premises it is previously required to presuppose the truth of the conclusion. This kind of characterization of the $p.p.$ fallacy clearly relies on the epistemological notion of an argument.

But there is also a dialectical notion of the fallacy of begging the question (or $p.p.$). The dialectical notion is characterized as follows: by presenting an argument to an audience one commits $p.p.$ if the argument contains some premise that would be denied or cast in doubt by that audience or whose justification presupposes something that would be denied or cast in doubt by that audience (not of course *every* audience). According to this notion, one could present an argument that is not fallacious from the strictly deductive point of view and is not circular either, but that clearly commits $p.p.$ An example would be George Edward Moore's argument for the existence of the external world (see Moore 1939). This argument, which (reconstructed in the usual way) is valid, is not circular either, but it begs the question against the skeptic as it presupposes something (i.e., that we are justified in believing that here there is a hand) that would be cast in doubt by the skeptic (for an exposition in this sense cf. Pryor 2004). If the argument is directed against the skeptic, that is, if it is understood as trying to respond to the threat of the skeptic, then the argument clearly commits a *petitio*. If we consider what Dummett (1978, 296) calls 'suasive arguments', i.e. arguments that aim at persuading the people of an audience to accept a conclusion on the basis of premises they already accept, then Moore's argument is not suasive, as he is invoking premises that are not accepted by the skeptic.

What Mill has in mind when he talks about $p.p.$ is the epistemic notion. For Mill, "[t]he difficulty of comprehending how this fallacy could possibly be committed, disappears when we reflect that all persons, even the instructed, hold a great number of opinions without exactly recollecting how they came by them." (Mill 1843,

p. 820). The arguer may well remain ignorant about (or may be not aware of) how she arrived at establishing the premises, i.e. which kind of evidence she has to assert the premises (and, hence, that the conclusion may be presupposed in the premises). Later in the text, he claims: “[t]he most effectual way, in fact, of exposing a *Petitio Principii*, when circumstances allow of it, is by challenging the reasoner to prove his premises” (Mill 1843, p. 821). When the reasoner is required to offer a justification for each of the premises, she can realize for the first time that the conclusion was somehow implicit in the premises. Here I want to make three observations: (i) the making explicit the justification for the premises depends on the context, but (ii) in every argument, one is committed to provide a justification for the premises if she is asked to do it by the audience to which the argument is directed (as I will argue, this is a result of the general implicature of arguing); and (iii) in every deductively valid argument what is for the conclusion to be contained in the premises is the informational content and, hence, the truth of the conclusion is also presupposed, but not the warrant (at least not necessarily). The justification of the premises must be independent of the justification of the conclusion. Otherwise, the argument would indeed commit *p.p.* But the justification of the premises does not need to depend on the conclusion. The manners in which we reasoners use to arrive at establishing the premises of an argument may differ a lot. We can know them, for instance, via intuition or via induction (Mill only admits the second), or we may just propose one of the premises as a hypothesis in order to test it or simply to provide a tentative explanation. The hypothetical-deductive method functions in this way, though Mill criticizes the method and argues that must be substituted by the inductive one. As Mill, because of his radical empiricism, excludes every kind of reasoning apart from pure inductions, he must either conclude that deductively valid arguments commit *p.p.* or to accept only inductive inferences as real inferences and, thus, to exclude deductive arguments from the class of inferences, i.e. to deny that they are arguments aiming at establishing the conclusion.

So, as it has been interpreted by many authors, Mill leads us to the following dilemma:

1. Either we accept that deductive arguments are inferences aiming at proving something and, then, we must conclude that they are fallacious because of their begging the question,

2. Or we do not accept that deductive arguments are inferences and, then, we must reject that deductive arguments can prove anything.

Mill takes the second horn and concludes that deductive arguments are not real inferences. Thus, Mill's attack against deductive arguments (as committing the *p.p.* fallacy or, alternatively, for their being no inferences and just relying in inductive arguments) is thus another way to state that deductive arguments are incapable to produce new knowledge and to state that the only *real* inferences are the inductive ones. So, Mill's attack against deductive arguments is inextricably connected with Mill's radical empiricism (see Skorupski 1989, 103-121; see also Scarre 1989, 41-58, and Skorupski ed. 1998, 41-44). If deductive arguments are just reformulations of inductive inferences (Mill thinks of the general premises of a syllogism as being conjunctions of particular statements), they could contribute to the production of new knowledge, but then they would provide new knowledge—and hence could be considered to be real inferences—not for their being deductive, but for their being hidden inductions.

Mill's question whether deductive arguments commit *p.p.* was of course not new in the history of philosophy. As Scarre (1989, 40) claims, it is to be traced back to Sextus Empiricus. Even Jackson seems to have the problem in mind when he says:

“The recurrent theme textbooks accounts of begging the question is the idea that an argument begs the question if any doubt about the conclusion would equally infect the premises. The trouble is that if I doubt *C*, I ought to doubt the premises of any valid argument to *C*”. (Jackson 1987, 112).

Mill's solution in terms of a radical empiricism has nevertheless its novelties. His point is not simply logical, is more of epistemological nature: in order to establish the major premise of a syllogism, we already need to know the conclusion. So, in inferring the conclusion we are not gaining any *new* knowledge. If we interpret this literally, Mill is not saying anything more than a triviality: deductive inferences are not ampliative. So, he must say *something else*. What he is really saying is something much stronger (and more interesting, though wrong): deductive arguments are not probative and do not provide knowledge at all. What is then understood by 'new knowledge'? As Skorupski (1989, 106-107) has seen, Mill seems to assume that the following inference is correct:

In a formally valid deductive argument, the conclusion is already asserted in the premises.

Therefore, someone who knows the premises of a valid deductive argument to be true must already know the conclusion to be true.

But this is false! As we are not logically omniscient, we may well not know the conclusion before undertaking the inference that leads to the conclusion. On the other hand, and most importantly, we do not have to know that the conclusion is true in order to establish that the premises are true. As we have said before, in general we will be provided of *independent* reasons to believe in the premises: *a priori* justification (if we allow for it), testimony, or inductive justification (taking into account instances different from those mentioned in the conclusion), etc.

Moreover, Mill assumes that premises must always be the starting point of an argument, whereas this may be not the case: abductive arguments, HD-explanations, and every argument trying to establish a known fact by deducing it from a list of axioms. It seems as if Mill takes the dilemma stated above as a point of support to later argue for the thesis that inferences are always from particulars to particulars, but from the dilemma itself we do not need to conclude that inductivism is the solution. It may be one of them. If we can solve the apparent dilemma without falling into the radical empiricist idea that real inferences are always inductive. So, deductive arguments do not commit *p.p.* neither in the logical sense nor, in general, in the epistemological sense (though there can be cases in which an epistemological circularity corrupts the entire argument). In the dialectical sense, it would depend on each case. Moore's argument, though not circular, clearly begs the question against the skeptic.

In the dialectical or pragmatic sense of argument, a subject *S* argues that P_1, \dots, P_n in favor of *C* in front of an audience *A*. At least in some cases of arguments, an implicature of 'arguing' is that *S* may provide an independent justification for his/her believing in the premises. If this is true, then that kind of arguments would not commit *p.p.* Mill poses a false dilemma. If with the purpose of justifying *C* in front of an audience I resort to a certain argument in order to obtain *C* from the premises P_1, \dots, P_n , part of the implicature contained in my argument is that I own a distinctive justification for my premises and this justification does not need to depend on the corroboration of conclusion *C*. This is what also explains (and

grounds) that, in cases in which the people of the audience do not share the same body of evidence than the reasoner who presents the argument and do not believe in the conclusion either, the natural reaction to the argument be to inquire about the kind of evidence possessed by the arguer for sustaining those premises. It would be irrational to *prima facie* deny the premises of an argument just for the mere fact that they (deductively) lead to a conclusion which we do not believe.

In general, living aside arguments in which the premises are not known or are merely presented as hypotheses or even counterfactual explanations, in every argument we commit ourselves to the belief that the premises are justified to a certain extent. Our partners in a discussion can legitimately ask what kind of evidence we have to sustain them. This is so as it seems to be an implicature of any speech act consisting in arguing something that we have available a justification for what we assert. In general, when a rational subject S argues C in the light of premises P_1, \dots, P_n in front of an audience, (i) S believes that P_1, \dots, P_n and, hence, has a justification available for them; (ii) there are relevant rules that allow to obtain C from P_1, \dots, P_n ; (iii) S believes that the argument is valid (a Gricean maxim in order to interpret our partners adequately could be: you must interpret your partner as aiming at providing valid arguments); (iv) that S believes that C (in the light of P_1, \dots, P_n). (Following Jackson 1987 and Pérez-Otero 2012, I call these conditions 'argumentative implicatures' in de Donato 2013).

Mill's error was detected by Cohen and Nagel (1962/1993: 180-181) when they realized that the justification an arguer must have to sustain the premises does not need to depend on the conclusion in an essential way. Furthermore, the conclusion could have been established independently of those premises and the purpose of the new argument could be to support it from other, perhaps more fundamental premises. These new premises could be more general laws, as when we derive a certain phenomenon, let us say the apparent motion of a planet, from Newton's axioms after we have already derived it from Kepler's laws. The conclusion may confirm in these cases our new premises, but there is no circularity in this procedure. Old facts may become evidence for new laws if these are able to explain the former. And the obtaining of facts that were already known from laws that are newly formulated as more general hypotheses can be considered to be *new* knowledge. Mathematics is not an ex-

ception to this. In mathematical reasoning (and in logic too), we can provide new knowledge by showing that certain propositions follow from our axioms, and it may be very difficult to provide the proof. As Michael Dummett has correctly seen, epistemic advance in mathematics is effected deductively and Mill “can in no way evade this conclusion by emphasising the allegedly inductive basis for our acceptance of the axioms: for, when a new theorem is proved within an axiomatised theory, the axioms were already given, and supply the basis on which the epistemic step is being taken” (Dummett 1978, 307). In every logical and mathematical proof, there is an inferential step leading from the premises to the conclusion such that a logician or a mathematician may gain knowledge from it. As long as there are different solutions to the apparent dilemma beyond Mill’s radical inductivism we could rely on them in order to avoid Mill’s step. Inductivism (in logic, mathematics, or natural sciences) should be sustained on different basis.

Mill tries to convince us from the fact that “[w]hoever pronounces the words, All men are mortal, has affirmed that Socrates is mortal, though he may never have heard of Socrates; for since Socrates, whether known to be so or not, really is a man, he is included in the words, All men, and in every assertion of which they are the subject” (Mill 1843, p. 206). Mill sometimes tends to speak about arguments as if they would mean to pass from a set of assertions to other assertions. Apart from the fact that not in every argument are the premises *asserted*, it does not seem that arguers consciously affirm every logical consequence of their premises. So, when someone discovers that some (known or unknown) proposition logically follows from a set of premises she is definitely gaining some knowledge⁴.

According to Scarre (1989, 54), there is still another way of attacking Mill’s claim (once suggested in conversation by John Corcoran and referred to by Scarre). Recall that, for Mill, every known universal proposition presupposes knowledge of its instances. This, in fact, is used in his allegedly probative argument that all syllogisms beg the question. But, thus, all attempts to prove that syllogisms beg the question would itself beg the question. In any case, I expect to have shown that the mere recourse to his radical empiricism does not suffice him to establish that all deductive arguments beg the question. The reason is that to say that deductive arguments ultimately rely on

4 See also Scarre (1989, 48) for a criticism of this passage.

inductive inferences is clearly compatible with saying that deductive arguments are probative of their own. In fact, the *p.p.* objection is just another way to show that deductive inferences are demonstrative (Peirce 1869, 196).

4. LOGIC, EPISTEMOLOGY, AND ARGUMENTATION THEORY

As we have already said in section 1, Mill's conception of logic has two aspects: on one side, logic is a study of the processes of reasoning, on the other, logic is the study that aims at providing rules. There are also two characteristic dimensions, both with their own peculiarities. On one hand, we have formal deductive logic (syllogistic); on the other, we have logic in the broad sense. Today it could be seen as a mixture of theory of argumentation and epistemology. Hansen (2014) has compared Mill's broad sense of logic with Johnson and Blair's idea of informal logic. He sees, correctly in my view, several similarities between Mill's conception of logic and informal logic, beginning with their common commitment to non-formal methods of analysis and evaluation. "Both parties oppose the idea that there is only one logic, formal deductive logic, and they are both advocates for the practical, social utility of their logics." (Hansen 2014, 196). In a similar way to informal logicians and argumentation theorists, Mill enriches logic with auxiliary tools in order to analyze arguments in their context: naming, definition, classification, the study of fallacies, the epistemic dimension of every argument. Hansen compares Mill's ideas with those of the theorists of argumentation and, more specifically, his views on fallacies and errors of reasoning, his practical methods for evaluating arguments, and his analyses of the functions of argumentation. Regarding these issues, Mill's ideas have indeed many similarities with informal logicians and argumentation theorists. Hansen also compares Mill's conception of general statements as rules or warrants rather (as a way of linking particular statements) than as premises with Toulmin's conception of argumentation, which is based on the notion of warrant not as a premise, or as part of the information provided by the premises, but much more as an inference-license. Finally, Hansen compares Mill's views on argumentative discussion (as he expresses them in his essay *On liberty*) with van Eemeren's pragma-dialectic approach to argumentation.

All this shows us that Mill's work on logic may perhaps not be important for the development of formal logic, but when we see it in the light of more contemporary contributions to the informal aspects of reasoning and, in general, in the light of the work argumentation theorists, Mill's work turns out to be an important landmark in the history of argumentation studies. Not only his views on fallacies, metaphors, or analogies are important, but also his idea according to which arguments should also be considered from an epistemological point of view. This was indeed the point behind his criticism of syllogisms and all deductive reasoning. For Mill, all arguments have an epistemic dimension, as they aim at providing reasons (information, evidence) to sustain the conclusion. If deductive arguments do in fact provide knowledge must therefore be because they rely on inductive inferences (the only kind of inferences that are real inferences). The point I wanted to highlight is that Mill was right in pointing out this epistemic dimension of every argument, but he was wrong in thinking that, when we see them in their epistemic dimension, deductive arguments must commit *p.p.* or rely on inductions, because he failed to realize how we can gain knowledge from deduction.

REFERENCES

- Cohen, M.R. and E. Nagel (1962/1993): *An Introduction to Logic*. Ed. by J. Corcoran, Indianapolis: Hackett.
- De Donato, X. (2013): "La noción de argumento y el problema de Mill", *Revista Iberoamericana de Argumentación* 6, 1-13.
- Dummett, M. (1978): *Truth and Other Enigmas*, London, Duckworth.
- Godden, D.M. (2005): "Psychologism in the Logic of John Stuart Mill: Mill on the Subject Matter and Foundations of Ratiocinative Logic", *History and Philosophy of Logic* 26:2, 115-143.
<<http://dx.doi.org/10.1080/01445340412331332809>>
- Hansen, H.V. (2014): "Mill, Informal Logic, and Argumentation", in A. Loizides, Ed., *Mill's A System of Logic: Critical Appraisals*, Routledge Studies in Nineteenth-Century Philosophy, London, Routledge, 192-217.
- Jackson, F. (1987): *Conditionals*, Oxford, Blackwell.
- Loizides, A. (ed., 2014): *Mill's A System of Logic: Critical Appraisals*, Routledge Studies in Nineteenth-Century Philosophy, London, Routledge.
- McCloskey, H.J. (1971): *John Stuart Mill: A Critical Study*, Macmillan, London.

- Mill, J.S. (1843): *A System of Logic*, in *Collected Works of J.S.M.*, London, Routledge & Kegan Paul, 1963-1991, vol. VII.
- Moore, G.E. (1939): "Proof of an External World", *Proceedings of the British Academy* 25, 273-300.
- Peirce, Ch.S. (1869): "Grounds of Validity of the Laws of Logic", *The Journal of Speculative Philosophy* 2: 4, 193-208.
- Pérez-Otero, M. (2012). "Los propósitos de razonar, ilustrados con el argumento externista anti-escéptico de Putnam". *Theoria* 73, 55-74.
- Pryor, J. (2004): "What's Wrong with Moore's Argument?", *Philosophical Issues* 14, (Epistemology), 349-378.
<<http://dx.doi.org/10.1111/j.1533-6077.2004.00034.x>>
- Russell, B. (1951): *Portraits from Memory and Other Essays*, New York, Simon and Schuster.
- Scarre, G. (1989): *Logic and Reality in the Philosophy of John Stuart Mill*, Dordrecht, Kluwer.
<<http://dx.doi.org/10.1007/978-94-009-2579-3>>
- Skorupski, J. (1989): *John Stuart Mill*, London, Routledge.
- Skorupski, J. (ed., 1998): *The Cambridge Companion to Mill*, Cambridge, Cambridge University Press.
<<http://dx.doi.org/10.1017/CCOL0521419875>>

Xavier de Donato Rodríguez
Universidad de Santiago de Compostela
e-mail: <xavier.dedonato@usc.es>