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Commentary on: M. Koszowy's "On the Concepts of Logical Fallacy and Logical Error"

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1. Overview of M. Koszowy's essay and treatment of the topic

Working generally within a framework of argumentation theory and the tradition of informal logic, Marcin Koszowy argues that the concept of **logical error** is more inclusive than the concept of **logical fallacy** and, therefore, that it better serves evaluating human mistakes. His essay has five sections: an introduction; a section each on the two concepts; a defense of their distinction; and some concluding remarks. Below we first review the salient points of this essay and we then provide some comments whose aim is to caution against psychologism.

Koszowy begins with the thematic question of his essay: "Does the concept of logical fallacy capture *all* cases of human 'illogical moves?'" (emphasis added). The 'all' here is not extraneous to his thesis, nor also is his use of 'moves,' nor again his later use of 'behavior,' which use signals a theme of his essay. He then introduces what he takes to be a philosophically important distinction between two admittedly ambiguous notions — **logical fallacy** and **logical error** — both of which he affirms involve *violations*: the one concerning the "norms of argumentative discourse," the other, now associated with illogical moves, concerning the "norms of 'logic' governing certain human knowledge-seeking activities." Koszowy here asks about the relationship between the two notions and then introduces another issue, one he believes vital to argumentation theorists: "what kind of general logical concepts are involved in describing illogical moves?" He links this question to Toulmin's concern about 'failures of rationality' and, indeed, about the very 'criteria of rationality.' In this connection, Koszowy reaches to relate his discussion to "the *genesis* of illogical thinking" and "the problem of describing and explaining *non-logical* moves" (emphases added). By making these moves he seems accordingly to have set himself the project of providing "criteria of human rational behavior"; and this is just what he is really after, notwithstanding the title of his essay. Koszowy closes his introduction by presenting his thesis that the concept of logical error — being more general than that of logical fallacy and thereby well qualified as a philosophically meritorious concept — is more pragmatically efficacious in capturing what is involved in the human behavior of making illogical moves. Again, his use of 'behavior' signals his orientation to a *theory of logic*. At the end of his essay Koszowy reaffirms this position by noting that his intention is not to replace the concept of logical fallacy with that of logical error, but only to introduce another theoretical concept that can better assess the "logical incorrectness of human thought," and again we encounter his affinity with Toulmin's notion of rationality.

From here Koszowy aims to steer his reader through a maze of philosophical concepts, generally using the terminology of argumentation theorists. A resonant, underlying theme becomes readily apparent: Koszowy, as many informal logicians *cum* argumentation and speech-act theorists, stresses the human activity of reasoning — he is interested to assess **cognitive correctness** and **cognitive error**. Indeed, Koszowy focuses on *human behavior* — namely, on the matter of "the criteria of human rational behavior." Logic, then, which notion he recognizes

to have as many meanings as logicians, has only a secondary concern with logical consequence (sc., with validity) and really a principal concern with psychology or with norms regulating human interaction (sc., with pragmatics). Koszowy does not seem to exclude dialogue with oneself. In any case, we are not exaggerating Koszowy's representation of logic: he cites Ewa Żarnecka-Biały, who holds that there are "infinitely many systems in logic, based on different *tricks* of syntax or semantics and in fact no one knows what relation these systems have to our natural logical skills" (emphasis added). Koszowy takes logic "broadly as *some system* of rules of rationality" (emphasis added).

Koszowy then distinguishes a logical fallacy from a logical error in the following way: a logical fallacy falls within the extension of **logical error**. Thus, while every logical fallacy is an instance of a logical error, not every logical error is an instance of a logical fallacy. Koszowy wants to argue that the concept of logical fallacy, as it has been traditionally used by logicians and more recently by argumentation theorists, is too narrow or restrictive to compass and to provide a good philosophical account of human error, or even correctness of reasoning. A logical fallacy, then, is either (1) *formal*, as in the case when a given proposition is not a logical consequence of a given set of propositions — this bears on validity, or (2) an error within the dynamics of argumentative discourse. Perhaps Koszowy means to consider the second kind of fallacy *informal*. Again, he links such fallacies to the 'fixation of beliefs.' Koszowy indicates that he takes considerations of logical fallacy to entail an epistemic, or intentional, approach to treating mistakes in reasoning, or, that is, mistakes in knowledge-seeking activities.

When Koszowy turns to consider logical error, he cites its two intensions: (1) the one seems to reproduce the notion of a formal violation of deductive inference; (2) the second to include any, and every, illogical move, which move he defines as an "error in the domain of thinking" ... and thinking, we learn, is not an exclusive club of select domains. At this juncture Koszowy informs the reader of his notion of **logic**, or *the logical*: logic is "the tool of cognition" and appropriately applied to any and every knowledge-seeking activity. Thus: "every violation of the rules governing knowledge-seeking activities constitutes the 'illogical' behavior." And, as a consequence of this posture, Koszowy takes illogical cognitive actions not to be reducible to those argumentative mistakes usually considered to be fallacies. A logical error, or an illogical *cognitive* behavior, threatens belief-fixation; and, after all, knowledge is a mental experience. And so:

cases of *inadequate thinking* can be named in various ways ... for example, [as] 'thought-stoppers', 'logically-odd assertions', 'self-refuting slogans', cases of 'shoddy thinking', 'logically-interesting bad thinking', 'thought-impeding errors' or even 'logical viruses' (emphasis added).

Koszowy considers these and other similar expressions to describe violations of thinking procedures or violations in knowledge-seeking activities, and he does not especially restrict the extension of knowledge-seeking activities. And whatever his more exact meanings of 'inadequate thinking' or 'illogical move' or 'irrational' are, they are surely not restricted to formal fallacies, such as, for example, *denying the antecedent*, or informal fallacies, such as, for example, *argumentum ad hominem*.

Next, Koszowy defends his thesis about the merit of distinguishing the notions of logical fallacy and logical error. He accords preference to the notion of logical error by providing, first, two arguments rejecting the distinction and then, second, rejoining each with his

counterargument. (1) The traditional approach to assessing fallacies as cognitive errors best provides for their analysis *within* the domain, or field, of argumentative discourse. (2) Fallacy theory naturally, or traditionally, falls within argumentation theory, which, then, is best, formally and theoretically, able to critique human unreasonableness. As a consequence, then, the notion of logical error is useless, redundant, and unnecessary. Koszowy responds to each argument. (1) The Aristotelian categorization of fallacies is too narrow — “many problems concerning errors were insufficiently considered; thus, his concept [of fallacy] does not cover the whole ‘environment of error.’” The force, Koszowy believes, lying behind his counterargument holds that “there are many factors constituting the common situation of the language use such as the *genesis of error*, which cannot be grasped by argumentation theory” (emphasis added). It is difficult to understand how Koszowy here relates ‘language use’ and ‘genesis of error.’ (2) The concept of fallacy, taken historically, involves “the goal of (scientific) cognition” and implicates scientific method. On this count, then, a fallacy involves some error of, or fault in, applying a method. Taking this position, according to Koszowy, immediately involves “(scientific) language ... logic ... rationality ... reasonableness ... rules (of logic, of rationality or of the discourse).” At this juncture Koszowy seems to toss the whole matter into the air when he affirms that we have, perhaps, an unassailable problem, namely, defining logical error; and he links this to the problem of choosing among the countless concepts of logic itself. Surely, then, traditional logic — or, traditional rationality — is useless on this count. This is a familiar theme among the various contemporary trends challenging the crown of formal logic.

The upshot of Koszowy's second counterargument — recognizing as it does (1) the putative narrowness of the notion of “the criteria of the correctness (reasonableness) of an argument” and (2) that the notion of “illogical incorrectness (the concept of ‘illogical move’)” compasses more than argumentational moves, or behaviors — the upshot is to “demand [nothing less] than establishing Toulmin's ‘criteria of rationality.’” In short, then, the extension of the notion of logical error embraces non-argumentational human errors in the broad domain, or the many domains, of knowledge-seeking processes. And, since Toulmin's notion of rationality — not restricted to the formal strictures of mathematical logic nor even to the formalism of argumentation theory that considers, for example, rules governing disputational discourse (by which are explained the traditional and non-traditional fallacies) — and so, since Toulmin's notion of rationality compasses almost any ‘reasonable’ behavior, Koszowy believes that the notion of logical error is unbounded in respect of what activity aims at fixing a belief. Perhaps threatening someone with a clenched fist is a logical move in one context, an illogical move in another context. How narrowly, on Koszowy's count, traditional logic is circumscribed. People might make mistakes when they think about things. Koszowy wants to consider each such mistake to be an instance of an illogical move. He seems to make no finer distinctions, and, of course, traditional logic is obviated.

Toward the end of his defense in behalf of employing the notion of logical error toward evaluating human reasonableness, Koszowy cites its *philosophical generality*, pointing out that such generality somehow entails its usefulness.

This is the argument for the usefulness of general-philosophical concepts for the study of argumentation. The concept of logical error is one of such concepts. Thus, I claim that the concept of logical error fulfills (and after all is able to fulfill) the task of a kind of the general-philosophical concept which the concept of fallacy does not (in all the cases).

He ends this passage with an affirmation that "this is [just] the pragmatic need of distinguishing the concept of logical error from that of fallacy." 'Pragmatic' here seems ambiguous. (1) Does it mean practical? Or (2) does Koszowy place himself in a certain tradition of logic?

Finally, Koszowy turns to consider some of the, perhaps, significant implications of his thesis. And here he allows himself some room to speculate. He wants his approach to compass not only the traditional matters of language and argumentation, but also those of cognition and thinking — that is, to embrace within the arena of logic such matters as relate to the domains of sociology, psychology, and linguistics, etc. Thus, a consideration of unreasonableness immediately implicates a consideration of reasonableness, both of which, again, are better treated by the notion of logical error and, thus, also of logical correctness. In his concluding remarks perhaps we find Koszowy's real, underlying agenda when he writes that a "logical error in [its] wide sense can be ... understood as a cognitive error — error in the domain of cognizing":

Then, for example, Mach's approach (1976) could count as psychological analyses of *logical* errors [Koszowy's emphasis]. If we understand fallacies epistemologically as mistakes in processes of gaining knowledge, it seems we need to consider the *psychological background (genesis) of those mistakes ...* (emphasis added).

By invoking Mach does Koszowy mean to endorse a neo-Kantian psychology? Koszowy then happily cites Hofstadter & Moser (1989: 185) to forge the link between the study of linguistic errors and psychological research in cognition having to do with, we take it, knowledge-seeking activity.

In fact, the study of errors is a royal road to understanding how concepts are unconsciously organized and activated. Psychologists have known for a long time that slips of the tongue can provide enlightening glimpses into the *mechanisms of cognition*. By studying such errors, one can learn much about the mind without doing any formal psychological experiments (emphasis added).

From here it is an easy step, Koszowy maintains, once considering a logical error to be "a case or a result of 'illogical thinking,'" to consider a logical error also "as irrational thinking, and in particular as 'irrational belief' or even irrational actions." Once this connection is established, there is license to consider even an immoral action as a logical error, as an 'irrational (illogical) action.' And Koszowy does not stop there with the possible applications of the concept of logical error. He writes, in a quizzically assertive manner: "can inductive inferences in experimental science be called 'logical errors'?" since "inductive reasoning is not certain." Again: "can the statistical inferences in science ... be treated as logical errors just for the obvious reason that human reasoning based on sensually experienced data is 'naturally' non-conclusive?" 'Non-conclusive'? With this statement, Koszowy seems to double back on his entire position, which position, while not fully in accord with argumentation theory, informal logic, critical thinking, etc., is nevertheless sufficiently ensconced in those traditions to challenge the 'hegemony' of formal logic. With his continual emphasis on *cognitive behavior*, or *mental states*, we wonder whether Koszowy is tracking neurophysiological brain activity.

2. Three matters of concern

Our survey of Koszowy's essay aims to highlight some of the salient points of his treatment of a topic of continuing interest to argumentation theorists and informal logicians. At the essay's end he expressed a hope that he had "drawn the initial map" for the task of examining further the "sound philosophical concept" of **logical error** that might "[fulfill] some important philosophical tasks." We believe that he has been modestly successful in this endeavor. Now, while Koszowy's treatment of this topic addresses a number of important concerns and provokes our intellectual imagination in a wide range of other concerns suggested by his essay, we shall restrict our comments to three matters only: the first addresses a matter of style; the second endorses Koszowy's focus on knowledge-seeking; the third, itself having two aspects, cautions Koszowy about a direction his research might take that would frustrate his philosophical objective.

2.1. A stylist matter

Koszowy has treated his topic in a manner that he acknowledges to be more preparatory to further study than conclusive in nature. This, of course, is surely an acceptable project. Still, he whets our appetite, and we wish that he could have satisfied our intellectual curiosity more substantively while not eclipsing his desire to set the course for continued study. Koszowy might have taken a significantly different tact, one providing his reader with something perhaps more daring if not challenging. In particular, right at the outset he might more determinately have drawn the distinction between the concepts of **logical fallacy** and **logical error** by making the distinction patently clear as he understands the two concepts — in other words, he could have taken authority for their use without defending their distinction. He could then have proceeded by demonstrating the efficacy of their application to evaluating some knowledge-seeking activities. A reader gets little taste of this matter. This alternative approach would obviate having especially to defend the distinction in such a detached and hesitant a manner. Taking this tact would have enhanced the coherence, the force, and the focus of his discussion and better assisted in accomplishing his objective ... and it would have engaged the reader more actively. Moreover, Koszowy seems not to have circumscribed the topic with sufficient care. As it now stands the essay seems on the surface to aim to establish a distinction between two concepts relating to argumentation theory and informal logic, when it rather more aims to redefine, or amplify already existing definitions of, human rationality. In this connection, Koszowy's choice of title seems to misrepresent his real intention, which is only subordinately to promote a theoretical distinction. The treatment of his topic could have been significantly more direct. Finally, the essay trails off into speculating about 'uncharted territory,' but it provides little indication of signposts necessary for finding our way, save for some references to Toulmin. Koszowy has taken too tentative a posture toward a topic that he might have treated more boldly. Still, this comment is less important in respect of substantive matters relating to Koszowy's topic to which matters we now turn.

2.2. The knowledge-seeking objective

Koszowy frames his discussion within a context of human beings seeking knowledge. This is really a core concern of Koszowy's essay, and one that we believe he has not sufficiently brought to the fore. Short of what we take to be his under-emphasis, we commend Koszowy for promoting this concern and encourage his continuing in this direction. In this respect, then, perhaps he seems to diverge somewhat from the objectives announced by pragma-dialecticians, argumentation theorists, and even informal logicians who all have subordinated or diminished this objective when they promote the *context/participant relativity* of good and bad argumentation, of cogency and fallaciousness, indeed, even when they raise questions about what an argument or an argumentation is. There are hints in Koszowy's discussion that he varies from argumentation theorists, but these hints are neither articulated directly nor incisively. Thus, in connection with acknowledging the importance of establishing knowledge, this under-emphasis is a disappointing aspect of his discussion. Especially problematic in this connection is Koszowy's nowhere using the word 'objective' to characterize the kind of knowledge human beings might earnestly seek. Koszowy is not expected to have extensively treated the various notions of knowledge, but he might have framed his treatment of error within, for example, a correspondence or a coherentist notion of truth and falsity. Having done this would have provided a baseline against which to assess 'logical errors' in the pursuit of knowledge as we understand this process.

However, on second thought, it might not have been accidental that Koszowy omitted treating the matter of *objective knowledge*, even incidentally. For, if he had subscribed to a notion of objective knowledge, it would have placed restrictions on his notion of **human rationality**, on his notion of **the criteria of human rational behavior**, and, more important, on his notion of **logic**. Traditionally, logic, or the science of logic, has compassed a study of underlying logics (each consisting in a grammar, a deduction system, and a semantics) — that is, in brief, a study of the underlying structures of intelligible discourse. In addition, traditionally, then, the science of logic has fallen under the domain of epistemology, even if important ontological matters are involved. Thus, employing a deductive logic has been understood as employing an instrument (one among others) whose end is to establish *objective knowledge*. And this end can be realized in two senses: (1) establishing knowledge (as corollary with induction) of the truth or falsity of a given proposition; and (2) establishing knowledge that a given proposition follows logically from other given propositions. Underlying intelligible discourse — might we say, human rationality? — at least since Aristotle's formulations, are the ontic principles of *non-contradiction* and *excluded middle*. And these principles implicate the necessity of considering semantic and deductive matters. While it is undeniable that natural language is very rich, or very messy as the case may be, and that thus far no formal, or artificial, language has ably modeled this richness of natural language, this failing (if it be so called) of formal logic does not obviate a need for precision of expression for the purposes of understanding, whether relating to scientific discourse, or negotiating a labor contract, or just getting some matter clear in one's own mind. In this respect, then, formal logicians have never considered themselves completely to capture rationality; rather, they have aimed to provide standards, such as, for example, notions of logical consequence and of a logically perfect language, by which human beings in their everyday lives can evaluate their progress toward objective knowledge. However, having logic embrace the pragmatics of discourse and personal psychology distracts this accomplishment.

Thus, on the one hand, Koszowy seems to promote the noble end of pursuing truth when he couches his discussion in a framework of knowledge-seeking, while, on the other hand, by broadening the notion of rationality he seems to subvert his purpose and subjectivize knowledge.

2.3.1. On the extension of rationality

Koszowy is surely a traditionalist philosopher, for he takes a very classical, *essentialist* posture toward the study of **human being**, and thus of *all* human activities. Underlying his treatment of logic, which, recall, he defines as "the tool of cognition" and "broadly as some system of rules of rationality," is his subscribing to the traditional Western proposition, expressed at least by Aristotle and St. Thomas, that 'Man is a rational animal' — and in the train of this proposition are all the associations of *logos* and logic and speech and language and reason and intelligence, etc. It is an easy step here from taking the human essence, in connection with Koszowy's topic, to considering the examination of *all* human behavior to fall under two classes, namely: rational behavior and non-rational behavior. And let us say, which seems commensurate with Koszowy's thinking, that all human beings aim at the Good, or, at least, are motivated by their conception of the Good, the Good or Truth, and, thus, they all aim at knowledge or what they take to be knowledge as such serves their purposes. And, since a given human being is not perfect in his/her understanding, a human being is liable to error — to display certain kinds of 'erroneous behavior' — in any number of knowledge-seeking domains.

Thus, working from an essentialist notion of human being, Koszowy maintains that when a human being acts reasonably, rationally, logically, sanely, etc., he/she is just expressing his/her proper nature *qua* human. This is acting — to wit, behaving and cognizing — properly or correctly in connection with matters human. This is just a *good person*. And when a human being acts unreasonably, illogically, or improperly, he/she is expressing something contrary to his/her nature *qua* human being. This is acting — to wit, behaving and cognizing — improperly, incorrectly, or erroneously in one or another context or situation. This is just a *bad person*, or, perhaps better, a 'good' person making a *bad move*.

Now, since (1) every human being *in esse* is a rational being, and since (2) every human move/behavior is an expression of human being (of being human), and (3) among human behavioral expressions are knowledge-seeking activities (a proper subset of human behaviors), thus, (4) every human knowledge-seeking behavior is a rational/logical behavior. This syllogism is simple enough. Yet, this does not sound quite correct, because: either (i) we recognize some human moves really to be illogical moves; or (ii) we are forced to admit that every knowledge-seeking behavior is a rational behavior and thus there exist no illogical moves. Neither i nor ii would seem satisfactory to Koszowy. Perhaps, (4) should read 'every human knowledge-seeking behavior is subject to evaluation as either rational/logical or irrational/illogical. Again, this does not sound quite correct from an essentialist posture with a widely compassing array of knowledge-seeking behaviors beyond those captured by either formal logic or argumentation theory.

Perhaps Koszowy subscribes to some notion that 'to err is human' and, corollary with this, to the notion that 'not to err is divine.' This being so, we might then modify the above argumentation as follows (picking up on suggestions of Koszowy's classical essentialist orientation). Since (1) every human being is a rational being in respect of the divine component in him/her, and (2) this rational capacity is not in-itself liable to error, and since (3) every human being has an animal, or 'human,' component, say desire, or attraction to pleasure and repulsion

from pain, and (4) error originates in the distractions of such 'sensation,' thus, (5) every human knowledge-seeking activity is a composite of reason and desire. Now we seem to be getting somewhere — the logical, to wit, the rational, is the divine element in knowledge-seeking activity; the illogical, to wit, the irrational, is the 'human' element in knowledge-seeking activity. At least, this in itself might not be problematic; for surely, the divine is the ideal of pure reason, to borrow Kant's expression, and this notion accords well with traditional philosophy. So what is illogical behavior? Well, just acting human. On this count, then, traditional formal logic is divine because ideal. However, Koszowy's logic is natural because messy. And since Koszowy, among others, wants to get at this messy natural cognition of real human beings, he turns to the subjective psychology of cognition and abandons the utility of formal logic toward evaluating human 'cognitive moves.'

Koszowy has considered human faulty behavior to fall under the rubric of **logical error**, and, by considering a logic error to be an illogical move, he has extended the notion of logical error to compass *any* cognitive mistake. Might this include forgetting, as in 'forgetting to bring one's shovel to an archaeological dig?' Or disappointment, as in 'being disappointed about not having enough money to attend university?' The behavior in both cases might frustrate knowledge-seeking. Be that as it may. Still, his including such cognitive states seems to end in embracing everything, and thus nothing at the same time, under logic. Once Koszowy has broadened **the domain of logic**, or **the logical**, to embrace virtually any human behavior, and making this move without at the same time circumscribing a notion of *objective knowledge* but leaving this open in a pragmatic way, he renders the notion of **the logical**, or **the rational**, devoid of objective significance. He has provided no criteria for deciding what counts as genuine knowledge, albeit his leanings seem pragmatic and relativistic in nature. Perhaps Koszowy works with some super-attenuated pragmatic notion of truth. Especially problematic, then, is his having left undetermined any ground that might mediate differences among persons in their quests for knowledge or even to discern truth from error in an individual's quest. Moreover, would Koszowy recognize there to exist different reasonablenesses? In this connection, whatever differences he has with argumentation theory and informal logic, he is in full accord with their broadening the purview of logic. Also problematic is his advocating the psychologizing of logic, unlike the informalists who have thus far aimed to skirt this pitfall. Our most serious concern aims to caution Koszowy about a possible outcome of his research direction.

2.3.2. Tending toward psychologism

The upshot of Koszowy's 'defense' is to suggest that those in the field of argumentation theory ought to adopt Toulmin's 'criteria of rationality' since the established criteria of correctness (or reasonableness) are inadequate for an analysis of the notion of **illogical incorrectness**. In his concluding remarks Koszowy affirms that this broadness of the concept of logical error qualifies it as having philosophical merit and that broadness makes the notion more *pragmatically* efficacious for evaluating human thought and behavior. This, as mentioned above, is problematic enough. However, Koszowy proceeds further to leave his reader on a psychologistic note by invoking Hofstadter & Moser (1989): "the study of errors is a royal road to understanding how concepts are unconsciously organized and activated"; and "slips of the tongue can provide enlightening glimpses into the mechanisms of cognition." There is a parting shot that the notion of 'illogical action' might be applied to assessing almost any human activity.

Whatever problems some modern logicians might have with formal logic — most of which concerns are rooted in their dissatisfaction with formal logic's inability to model natural language, to develop a fallacy theory, and even to capture "our natural logical skills" — their move to relativize cogency and fallaciousness by taking a pragmatic and/or psychologistic turn inescapably threatens any putative end they may retain to establish objective knowledge.

It is not an uncommon error among 'argumentation' theorists to confuse making an *inference*, which is a human cognitive activity having epistemic import, with an *implication*, which is not a human cognitive activity but an ontic relationship among propositions. A human being *infers*; a proposition *implies*. We need not become absorbed in discussion over whether or not propositions exist: let it suffice to say that human beings express themselves linguistically (among other means) by uttering sentences; and the sentences logicians are interested to study are those expressing propositions, say the meaning or meanings of a given object language sentence. Now, in connection with distinguishing inference and implication, we recognize our needing more carefully *to distinguish epistemic matters and ontic matters* — knowing from being, what appears to be from what is, what is known from what is not yet known, and, in general, what is subjective from what is objective. Diminishing the importance of this distinction amounts to surrendering a concern with objective knowledge.

Once the discourse about good and bad argumentation, or, as Koszowy picks up this theme, about logical and illogical moves, ventures into relativism and subjectivity, there remains no way to mediate difference of opinion toward the end of establishing objective knowledge. This characterizes PMD, or the Postmodern Disorder. Shying from addressing more directly the matter of establishing objective knowledge, a traditional purpose of logic, argumentation theorists and informal logicians, and now Koszowy, have been satisfied with treating the pragmatics of managing discourse. This is a worthy project; in fact, such theorists continue to make important contributions to contemporary mediation practices. When Koszowy squarely places his concern with distinguishing **logical fallacy** and **logical error** in the framework of knowledge-seeking, he distinguishes himself from some recent trends among those theorists. However, when he couches his search, and his notion of rationality, in assessing cognitive behavior, he subverts this intention. *Not* having established their concerns with human understanding firmly in an underlying ontology, in an ontology *underlying* epistemics, is a serious shortcoming of traditions to which Koszowy subscribes. Their dissatisfaction with formal logic is misplaced, notwithstanding the traditional scope of formal logic and its own omissions.

Let us take as given (notwithstanding the usual caveats) the existence of the world existing independently of human consciousness, on the one hand, and, on the other, the existence of human beings having cognitions about the world. Let us also say that a human being's thoughts (cognitions) about the world are reflections in consciousness of matters external to consciousness. (Of course, this statement does not capture all matters someone might consider.) In addition, let us say that these cognitions in consciousness are reflected by object language sentences, the kind logicians are wont to consider. Such sentences might be taken to express propositions about the world. When such a sentence expresses a proposition that itself corresponds to an objectively existing state of affairs, then we say the proposition is true, otherwise false. Saying that a sentence is true is elliptical for affirming the proposition to be true, that what it denotes, or the meaning of the sentence, corresponds to a situation existing independently in the world. Sometimes human beings get it right; sometimes they do not get it right. Sometimes they believe they have it right when they do; other times they believe

themselves to have it right when they do not. Etc., etc. A project of epistemology is to provide means for distinguishing true propositions from false propositions so that a person's knowledge of the world — the collection of sentences expressing propositions in consciousness — provides him/her an accurate and consistent understanding/knowledge/reflection of the world. Formal logic has contributed significantly to that project.

Now, moreover, if we understand the *law of non-contradiction* — an ontic principle — to obtain, then, while a given contradiction might be expressible in thought, what is denoted by the two contradictories is an impossible state of affairs. It is this condition of impossibility that makes a contradiction unintelligible. (Dialectical logic can be treated separately; our discussion circumscribes a traditional notion of contradiction.) Given this understanding of ontic matters underlying truth and falsity, *semantics* some might say, we can further grasp the ontic underpinning of validity, one dimension of the relations of propositions to one another. The ontic underpinning of validity makes unintelligible that true propositions imply a false proposition precisely because the state of affairs denoted by such propositions is impossible. We thus have confidence to affirm that the principle of contradiction is one foundation of rationality and intelligibility, whether we work with a correspondence, a coherentist, or pragmatic conception of truth. However, reducing logic, or rationality, to mental states — to have the laws of logic be the laws of mental functioning — without grounding those mental states in an objectively existing world, that is, without their being reflections in subjective consciousness of objectively existing states of affairs, is to embrace psychologism. Taking this tact renders the notion of **knowledge-seeking activity** meaningless, unless, of course, such activity is viewed as any behavior that produces a desired end. In that case, anything goes.

If we want to understand the world, working, for example, as here with a correspondence/reflection epistemology, and granting that such understanding is cultivated by having in consciousness true propositions, then we have ready to hand in **formal logic** one instrument (among others) to assist in seeking objective knowledge.

If we want to help persons work through differences of opinion, but not necessarily with an end to establish who is right, who wrong, but to come to some resolution (mediation) agreeable to disputing parties, then we have ready to hand **argumentation theory** that assists in managing disputation. However, this approach suspends the end of knowledge.

If we want to learn why someone is prone to believing that *affirming the consequent* produces a 'good argument,' or why someone is immoral, then we have ready to hand such disciplines as **psychology**, sociology, psycholinguistics, neurophysiology, etc., etc. Here we encounter such notions as 'what is rational to one person might not be rational to another person,' etc. Rationality becomes individualized or 'populationized.' This might help us along the royal road to acquiring "enlightening glimpses into the mechanisms of cognition," but it does not provide us with objective knowledge. This is especially problematic at a time when such understanding is all the more necessary.

3. Concluding remarks

Marcin Koszowy addresses a topic of traditional importance in the history of philosophy — namely, the pursuit of knowledge or truth. His essay has aimed to provide insight into errors persons make during their knowledge-seeking activities by defending the thesis that **logical fallacy** is too narrow a notion, restricted in application by both formal logicians and

argumentation theorists. Rather, he has argued that **logical error**, that is, mistakes in cognition, is a better notion for evaluating human error in pursuit of knowledge. However, when (1) he affirms that logic is an instrument used in knowledge-seeking activities and then (2) concerns himself with patterns of cognitions without reference to objective conditions against which to assess those cognitions, he frustrates his purpose. His broad philosophical notion of **logical error**, just because of its compassing cognition, then, cannot fulfill some important philosophical tasks, whatever they might be. In short, Marcin Koszowy's prescribing psychologism will undermine his philosophical objective.