

Non-cogency misjudged: Reconstructing a three-stage mistaken argumentation-process

La no-cogencia subestimada: Reconstruyendo el error de tres etapas del proceso argumentativo

José M. Sagüillo

Department of Logic and Moral Philosophy, University of Santiago de Compostela,
Santiago de Compostela, Spain, josemiguel.saguillo@usc.es

Received: 12-11-2009. **Accepted:** 17-12-2009.

Abstract: Good intentions are not enough for cogent argumentation. Cogency is inherently epistemic and it is sustained in some prior conditions. First, it is necessary to establish the universe, or subject-matter, the discourse is about. Second, statements that convey information of that subject-matter must be coherent, they should *say* something. Third, chains of reasoning leading from one statement to another must be correct. These three conditions feature cogency as it is realized in argumentative practice. This article tracks non-cogency misjudged when combining concepts into a pseudo-thought and “linking” it in reasoning. Mistakes involved are uncovered by means of a two-vector analysis. The first arrow exhibits the *unfortunate* genealogy of a three-step sequence of errors. It begins with a category mistake due to crossing the extension of the concept of the universe of discourse established. It continues with a fallacy due to a gap in reasoning, and ends in a paradoxical argumentation. Paradox is a clear indication that something needs to be revised in our web of beliefs. The converse arrow regains cogency by de-constructing the previous vitiated process. It exhibits a way out of the paradox so obtained by re-classifying it as a fallacy due to the prior commission of a category mistake. Thus, cogency is restored and its whereabouts sharply recorded.

Key words: Argumentation, cogency, category mistake, fallacy, paradox.

Resumen: Las buenas intenciones no bastan para la argumentación cogente. La cogencia es inherentemente epistémica y requiere además ciertas condiciones previas. Primero, es necesario establecer el universo, o asunto, acerca del cual se diserta. Segundo, los enunciados que proporcionan información sobre dicho tema deben ser coherentes, deben de *decir* algo. Finalmente, el engarzado de las cadenas de razonamiento que llevan de un enunciado a otro debe ser correcto. Estas tres condiciones caracterizan a

la cogencia tal como se sustenta en la práctica argumentativa. Este artículo persigue los extravíos de la cogencia en la anterior triada y su posterior recuperación por medio de un análisis de dos vectores. Se presenta una descripción de ida y vuelta que incluye el primer trayecto de la genealogía de una cadena de errores. Se comienza por un error categórico debido a una transgresión en la extensión del concepto de universo de discurso que se trate, a través de una falacia debida a un gap en el razonamiento, hasta una argumentación paradójica. Una paradoja señala que nuestra red de creencias necesita ser revisada. El trayecto inverso de la de-construcción de este proceso viciado nos conduce de la paradoja hasta su reclasificación como falacia debido a un previo error categórico. De este modo, la cogencia se recobra y sus paraderos quedan adecuadamente registrados.

Palabras clave: Argumentación, cogencia, error categórico, falacia, paradoja.

1. Terminological preliminaries

In this paper a statement is a sentence in a given interpreted language, whether natural or artificial. People use statements to say something (the proposition expressed) and to convey information about something (the universe or subject-matter referred to). Successful communication among human beings requires the good practice of cogent argumentation. People use argumentations to obtain knowledge whenever some previous knowledge –whether deductive or inductive– is available. An argumentation is a three part process composed of a set of premises, an intermediate chain of reasoning, and a conclusion aimed at. Argumentation is cogent or fallacious. This notion of argumentation is clearly participant-relative. A cogent argumentation is an argumentation in which its intermediate chain of reasoning shows that the conclusion aimed at follows from the initial premise-set when it does. A fallacy is an argumentation whose intermediate chain of reasoning is flawed. Explaining some of the whereabouts of cogency in this paper requires the technical concept of premise-conclusion argument. A premise-conclusion argument is a two part system composed of a set of propositions (the premise-set) and a single proposition (the conclusion). Arguments are valid or invalid. Notice that a premise-conclusion argument does not involve any thinker. Philosophically speaking, “argument” is a purely ontic concept without any reference whatsoever to thinkers or reasoning. Thus, we can discuss validity or invalidity of a given argument *per se*, but argumentations are cogent or fallacious with respect to intelligent beings. Humans produce

argumentations by generating intermediate chains of reasoning between premises and conclusion of a given premise-conclusion argument the validity or invalidity of which is under investigation. Notice also, that a fallacious or non-cogent chain of reasoning in a given argumentation does not inform the issue as to the validity or invalidity of the corresponding “binding” premise-conclusion argument. Thus, in the present paper, no fallacy is an invalid argument and *vice versa*. Finally, the term ‘cogency’ shall be used in two different but related contexts. Given the right conditions, cogency is present whenever a compelling combination of concepts leads to the expression of a thought or proposition. For present purposes, it is immaterial whether cogency is understood as *grasping a thought*, when there is a thought to be grasped in the first place, or whether cogency is understood as *expressing a thought* when there is a thought intended to be expressed. Likewise, cogency may also be coherently predicated of chains of reasoning. Aristotle was the first thinker to indicate that in a given cogent chain of reasoning each of its steps is obtained by means of already *immediately validated* arguments; i.e., perfect syllogisms whose validity was already known by the thinker. Quine (1970/1986) calls these “visibly sound”. This way of considering cogency as applied to concrete chains of reasoning is conceptually prior to rules of inference. Rules of inference are derivative and can be simply taken to be equivalent classes of concrete arguments, already known to be valid, which share the same form. As Corcoran (1989: 36-38) indicates, the real issue here seems to be how cogency of immediately validated arguments is possible. Both sides of the deep issue of how cogency of simple thoughts and of immediately validated arguments is possible shall require a further paper. In this article cogency is used as a criterion applied to discriminate propositions from pseudo-propositions and deductions from fallacies. Moreover, cogency is relative to a cognitive agent, whether an individual or a community of thinkers.

Tradition indicates that cogent argumentation requires careful attention of the moves of the mind towards concepts, statements, and reasoning. These three building blocks are necessary stages in accomplishing a cogent argumentation and their first-grade quality is not negotiable. *Misjudging* a defective argumentation *as cogent* clearly indicates that reason lost track in judging at least one of these three elements. Thus, the present analysis points at errors in judging cogency. It begins by considering a category-mistake

followed by a fallacy or a gap supervenient on that fallacy, to end with the emergence of a subsequent paradox which indicates that some mistaken move in the previous triad went unnoticed or misjudged. This unfortunate sequence has the potential to generate false beliefs. Belief revision is obtained by a de-constructive process leading to cogency and good judgment.

2. Pseudo-thoughts misjudged as cogent

A discourse –whether a monologue or a normal conversation– presupposes people engaged in it with the purpose of effective communication. In order to enhance effective communication among the speakers, it is necessary to establish the topic, subject matter, or universe of discourse, that is, the class of objects that are presupposed by the context of the conversation. In this connection it is often said that a given speaker who did not establish her topic or universe of discourse “does not know what she is talking about”. We do not need to know many things about the subject-matter of a given discussion, but we must know what the subject-matter is. The importance of the universe of discourse tends not to be noticed until some sentences are taken out of context or there are new persons joining the discourse who are unaware of the universe that has been established. For example, the statement ‘Every square is a double square’ is true in the universe of plane geometrical figures, but it is false in the universe of natural numbers. The main assumption of this paper is that category mistakes are relative to the universe of discourse established. More precisely, a category mistake or incoherence arises when the proper extension of the category-class corresponding to the concept of the universe of a given discourse is trespassed by incoherent predication. This means that each predicate has a range of applicability within which it holds true or false and outside of which it may become senseless. This viewpoint clashes with Frege’s for whom the proper range of applicability for predicates is universal. However, it is natural to restrict the topic of a coherent discourse and this is the predominant conception in contemporary semantics. It is important to notice that the concept of the universe of discourse plays the role of logical subject in the statements of that discourse. Misunderstanding a concept, due perhaps to insufficient experiential mastery of it, or perhaps misidentifying it, very often leads to non-sense. Sometimes apparently cor-

rect or well-formed combination of that concept with another may cover up incoherence. For purposes of illustration, consider a toy-example: The property of being red is *coherently* predicated of a certain rose in the universe or category-class of flowers. The proposition to the effect that that rose in the given category-class possesses that property is either true or false. The property of being red is *incoherently* predicated of a number in the universe or category-class of natural numbers. There is no proposition to the effect that a certain number in the given category-class possesses that property. Similarly, there is no proposition to the effect that a certain number in the given category-class does not possess that property. On this assumption, a category mistake provokes a fallacy for lack of cogency whether in the initial, middle or final step in the intermediate chain of reasoning. Category mistakes due to incoherent predication in the previous sense are often qualified as “sortal mistakes”. A sortal mistake in this sense is “out of the game” sort to speak. This characterization is conservative in the sense of preserving bivalence of the underlying logic and in granting that philosophical tradition witnesses incoherence in striving for intellectual expansion. For more involved and common mistakes of this sort, take the use-mention mistake, a mistake which consists in taking an expression for the thing named by it and conversely. Some ways out of the “Liar sentence” are good illustrations of the present idea that a category mistake is non-sense rather than plain falsity. Likewise, consider the composition-division mistake which consists in predicating a certain property of a genus only applicable to each of its members, and conversely. Some ways out of the Russell’s sentence exemplify this case but not all of their proposed solutions follow the present idea that a category mistake is non-sense rather than plain falsity. It may be suitable to qualify these two previous cases as “type-mistakes,” since some sort of conceptual hierarchy is obliterated. Thus, *prima facie*, there are category mistakes in “extension” (sortal) and there are category mistakes in “depth” (type). For a recent re-consideration of the composition/division mistake see Eemeren, F. H. van and Garssen, B. (this journal 2009). The important thing for present purposes is not to lose *from sight* the fact that it is people who make mistakes. Therefore, it is people who make category-mistakes. These seem to depend on a sort of deficient comprehension of the concept of the universe of a given discourse, whether sortal or stratified. This deficiency may also be due to lack of knowledge or even inattention.

3. Fallacies misjudged as cogent reasoning

Needless to say, no alleged classification for fallacies is definite, much less formally and materially adequate. It may also be handy to distinguish sophisms, which involve intentionality on the side of the arguer, from fallacies, which in the present sense are just mistakes. For present purposes, a fallacy is a flawed chain of reasoning.

Category mistakes often provide grounds for committing a certain fallacy or mistake in reasoning. To characterize it, let us remind ourselves that any step of cogent reasoning operates from premises or previous steps towards a conclusion aimed at. Each of these must be a statement expressing a thought or a proposition. In other words, it is propositions, or derivatively statements, that stand in the logical relation of implication. Category mistakes neither imply nor are they implied by any proposition. How do incoherencies cause a mistake in reasoning? In this predicament, the arguer wrongly believes that she understands or grasps a proposition when, in fact, the object of her intellectual regard is non-sense. In fact, no cogent chain of reasoning ends nor does it begin with a category mistake. In other words, a category mistake does not “hook up” nor is it “hooked up” in any cogent chain of reasoning. Notice that by premise-addition one cannot remedy a fallacy which is due to the presence of a category mistake. The only way out is to retract; i.e., to take something back. But, of course, prior to this, the agent must acknowledge that cogency has been lost, even though *then* she was not aware of it. In a sense, this is a sub-case of a *non sequitur*. Tradition often pictures a *non sequitur* as involving two cases: when the argument used in the chaining of reasoning is valid *per se*, but not known to be valid by the thinker, and when the argument used in the chaining of reasoning is invalid *per se*, but not known to be invalid by the thinker. Whenever a category mistake arises, cogency fails. But it should be clear that no linking argument is available in the first place, since a category mistake is incoherence. Incoherence is no proposition, and arguments are composed exclusively of propositions. Often, this unfortunate concatenation of errors ends in a paradox. Let us see how this works.

4. Paradoxical argumentations and outcomes

The Quinean *web of beliefs* comes as a useful metaphor to understand the dynamics of the epistemological enterprise and the essential role cogent argumentation plays in its expansion. The typical move here is to settle a given hypothesis. In its present sense a hypothesis is a proposition not known to be true and not known to be false. When an agent deductively tries to accept or reject a given hypothesis, the method is either to show that it is true by proving it deductively as logical consequence of premises already known to be true, or to show that it is false by deducing a conclusion known to be false from the hypothesis alone or from the hypothesis together with other premises all known to be true. The first way of settling the truth of the given hypothesis results in a successful argumentation realizing the deductive-method, and the second way of settling the falsity of the given hypothesis results in a successful argumentation realizing the hypothetic-deductive method. However, even granting hard work, expanding the web does not come out that smooth all the time. Frequently, the attempt to reduce a given hypothesis to propositions already accepted involves more or less shocking surprises, as in the case of paradoxes.

For present purposes, a paradox for some agent x at time t is an argumentation with respect to which x believes that its premises are all true, x believes the conclusion to be false, and x believes the intermediate chain of reasoning to be cogent. Since no set of true propositions implies a false proposition, it is clear that paradoxes are symptoms that some wrong belief has been held. Thus, the meaning of term ‘paradox’ is unsuccessful or defective. Paradoxes presuppose at least one belief bound to be changed. Paradoxes are *transient* argumentations, because sooner or later they are bound to be reclassified by x , as a result of revising one previously held belief. The thinker then engages in the process of checking or expanding the available evidence, so as to be capable of either reassuring or changing at least one of the previous three beliefs. If the change of belief is with respect to the truth of the premise-set, then the paradox vanishes and the argumentation is reclassified as a [indirect] “deduction-candidate”. If the change of belief is with respect to the conclusion, then the paradox vanishes and the argumentation is reclassified as a “proof-candidate”. If the change of belief is with respect

to the cogency of its chain of reasoning, then the paradox vanishes and the argumentation is reclassified as a “fallacy-candidate”. For present concerns, only the last outcome matters.

It is interesting to note that most of the characterizations and classifications of paradoxes in the current literature are given not by looking at the nature of paradoxes, but by looking at the ways which led out of paradoxes. Thus, according to Quine (1966/97), paradoxes can be “upsetting”, “surprising”, (even “comic”) etc. All these expressions make evident elliptical reference to the intended audience. He also indicates that his initial account “stands up pretty well. But it leaves much unsaid”. Surprisingly, Quine does not provide any further hint on the issue of the nature of paradoxes in his relational sense, but rather gives a taxonomy classifying three ways out of the paradoxes, or three ways of re-classifying a given paradox. He never says how they are generated, nor does he discuss what makes the result upsetting or surprising. Quine appears to be oblivious to the step or leap in the development of a given discipline in which there are many things going on, both in the scientific community and in each of the minds of its members. At least this much unsaid remains so, and the reader is confronted not with a study of paradoxes, but rather with an analysis of their possible outcomes. Roughly, under his solution-criterion, Quine classifies paradoxes as veridical, falsidical and antinomies. A veridical paradox is an argument (an argumentation in the terminology of this paper) in which the conclusion is actually true, although it was previously believe to be false. A falsidical paradox is an argumentation in which at least one of the premises is false, but previously believed to be true. Here, Quine merely indicates that in some cases falsidical paradoxes are just fallacies, but he reminds us that fallacies often lead either to true or to false conclusions. Finally, an antinomy in Quine’s characterization is a paradox in which some previously important and held belief must be dropped, despite its paradigmatic entrenchment and the sociological impact caused by such a revision. For a detailed study along similar lines of solution-types for paradoxes, see Cuonzo (this journal 2009).

5. Lost and found

For purposes of a reconstructive analysis, uncovering non-cogency misjudged

as cogency, and in order to show how the process of detecting it takes place, we focus on the specific case in which the initial doubts of the thinker lead to suspicion with respect to the cogency of the chain of reasoning in the given paradoxical argumentation which was erroneously taken to show that the conclusion followed from the premise-set. Suspicion that something went wrong in the chain of reasoning gradually emerges until the mind judges that perhaps one of the alleged initial premises, one of the intermediate steps, or even the conclusion, did not express a thought, but incoherence. Thus, there is a gap in the chaining process and, thus, the chain of reasoning is now believed to be non-cogent. There were after all, no compelling reasons for combining concepts into a thought in the first place, and from this initial non-cogency no linking chain of reasoning can be cogently constructed. Every day discourse often exhibits this kind of slip due sometimes to use-mention mistakes. For example, “Our research project is about meanings of love. Hence we should pursue a semantic approach and recover it from prevalent psychological accounts”. Here the premise is incoherent. In the next case one intermediate step is incoherent: “Aristotle *embraces* middle points. Richard does not understand how something as imperfect as youth gets transformed into the perfection of maturity, and maturity gets itself degraded into elderliness. Aristotle, Richard thinks, is anxious in his attempt to highlight maturity over the other ages and thus he amplifies that term. Thus maturity is an amplified and perfected term”. These two examples are sortal-mistakes in our terminology. Finally, “Since humans are numerous and Socrates is a human, Socrates is numerous” exemplifies a type-mistake.

Moreover, *reasoning* in history goes first as phenomenon or “data” to be studied by argumentation as discipline and this paper tries to be faithful to some of its detected subtleties. For more technical and historically relevant illustrations it is useful to point out that Tarski thought the Liar string was ill-formed and hence not an interpreted sentence or statement due to the object/meta-language crossing, which is “responsible” for the family of liar-type paradoxes. According to Tarski’s diagnosis, the problem lies in taking something that looks like an [interpreted] sentence to be a sentence, without actually being a sentence, because it does not express a proposition, but incoherence. Tarski’s solution amounts to a paradox-avoiding restriction based on a suitable hierarchy of languages. In this hierarchy, predicating truth or falsity of a given sentence of a certain n -level language must be ex-

pressed by a sentence belonging to an $n+1$ level language, the first language being a sublanguage of the second. Thus, Tarski's way out of the paradox amounts to considering the Liar argumentation a fallacy. The thinker doing the reasoning from premises to conclusion mistakenly took a premise, the Liar-sentence, to be a sentence expressing a proposition. Hence, no cogent reasoning was actually developed, since no proposition was available in the first place to allow a cogent step-by-step deduction. There was no first link in the chain of reasoning, due to a category mistake. Hence, there was no [cogent] reasoning, but an inferential gap. Of course, according to the previously stated definition, once the subject realizes his wrong acceptance of the reasoning performed, the paradox vanishes or is re-classified as a fallacy, because as it was already said, it involved a flaw in the chain of reasoning. Notice in this connection that the words 'rejecting' or 'dismissing' should not be taken to mean "changing the previous belief with respect to the premises to the opposite belief" but rather as meaning "there was no *real* belief to begin with. A category-mistake was misjudged as a proposition (a [cogent] thought), and based on it a fallacy was misjudged as cogent reasoning. In this connection, it is interesting to notice the following conundrum: on the one hand, if linguistic stratification were really necessary, then the paradoxical Liar argumentation would in fact be a fallacy, but –hence–, no contradictory conclusion was cogently produced. On the other hand, if the reasoning leading from premises to conclusion of the paradoxical Liar argumentation were cogent, then linguistic stratification would not, after all, be necessary. An analogous well-known example comes from Russell's own solution to his set-theoretic paradox. Since the Russell paradox begins from a string of characters intended to express a proposition to the effect that there is a set of all non-self-member sets, if type-theoretic stratification were really necessary, then the paradoxical Russell argumentation would in fact be a fallacy, but –hence–, no contradictory conclusion would be cogently produced. On the other hand, if the reasoning leading from that premise and known tautologies to a contradictory conclusion were cogent, then type-theoretic stratification would not, after all, be necessary. These puzzles simply vanish when paradoxes and their causes and solutions are suitably relativized to both, time and people.

6. Final remarks

Category-mistakes, fallacies, and paradoxes have a bi-dimensional nature in the sense of being participant-relative and context-dependent. Under the previous analysis, there is no category-mistake, no fallacy, and no paradox *per se*. Some ramifications of cogency-deviation have been identified and in each case, some of the underlying reasons for misjudging non-cogency were uncovered. Later the thinker restores the equilibrium in the web by detecting an inconsistent set of beliefs. In the present case, one of the wrong beliefs of the thinker derives from mistakenly judging cogency of a chain of reasoning, and cogency among the concepts in something that looked like a proposition, but was not. It is generally believed that we learn more from our mistakes than from plain success. In a way, it is precisely their cognitive value as learned-lessons which sustains and improves our own epistemic capacities for cogency recovery.

Acknowledgments

I am very grateful to an anonymous referee of *Cogency* for comments and stylistic improvements. Also special thanks to John Corcoran, Xavier de Donato, Concha Martínez, Cristián Santibáñez, Luis Vega and Luis Villegas for suggestions that were incorporated in this version. This paper is part of research projects FFI2008-00085, Hum2006-04955 and FFI2009-08828 of the Spanish Government.

Work Cited

- Corcoran, J. "Introduction". In A. Tarski, *Logic, Semantics, Metamathematics* (Second edition, pp. xv-xxvii). Indianapolis: Hackett, 1983.
- Corcoran, J. "Argumentations and logic". *Argumentation* 3 (1989): 17-43.
- Cuonzo, M. "How to Solve Paradoxes: A Taxonomy and Analysis of Solution-Types". *Cogency* 1 (2009): 9-21.
- Eemeren, F. H. van and Garssen, B. "The fallacies of Composition and Division Revisited". *Cogency* 1 (2009): 23-42.

- Quine, W. V. *The Ways of Paradox and other essays*. Revised and enlarged edition. Cambridge, Mass.: Harvard University Press, 1966/1997.
- Quine, W. V. *Philosophy of logic*. Second edition. Cambridge, Massachusetts and London: Harvard University Press, 1970/1986.
- Sagüillo, J. M. "Paradoxical Argumentations". In F. H. van Eemeren et al (eds.), *Proceedings of the III International Conference on Argumentation* (Volume II, pp. 13-22). Amsterdam: Sicsat, 1994.
- Sagüillo, J. M. "Domains of sciences, universes of discourse and omega arguments". *History and Philosophy of Logic* 20 (2000): 267-290.
- Tarski, A. *Logic, Semantics, Metamathematics*. Second edition. Introduced and edited by J. Corcoran. Indianapolis: Hackett, 1983.
- Vega Reñón, L. *Si de argumentar se trata*. Madrid: Montesinos, 2003.